IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Patent Application of **Michael R. FRITON** Appln. No.: 10/776,242 Filed: February 12, 2004 For: FOOTWEAR AND OTHER SYSTEMS INCLUDING A FLEXIBLE MESH OR BRAIDED CLOSURE SYSTEM	Group Art Unit: 3728 Examiner: John T. Kavanaugh Attorney Reference: 005127.00180 Confirmation No.: 2638

APPEAL BRIEF

Commissioner for Patents
U.S. Patent and Trademark Office
Alexandria, VA 22313

On Behalf of NIKE, Inc.

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Dated: July 10, 2006

APPEAL BRIEF

Commissioner for Patents
U.S. Patent and Trademark Office
Alexandria, VA 22313

Sir:

Appellant submits this Brief in support of its appeal to the Board of Patent Appeals and Interferences from the decision of the Primary Examiner finally rejecting claims 7-23 and 30-37 in this patent application. For at least the reasons set forth in detail below, Appellant respectfully submits that the Primary Examiner's final rejection of claims 7-23 and 30-37 constitutes reversible error, and therefore, the Board should reverse the rejections.

(i) Real Party In Interest (37 C.F.R. § 41.37(c)(1)(i))

The real party in interest in this appeal is NIKE, Inc., a corporation organized and existing under the laws of the State of Oregon in the United States of America, and having a principal place of business at One Bowerman Drive, Beaverton, Oregon 97005-6453. The Assignment of this application from the inventor to NIKE, Inc. was recorded in the U.S. Patent and Trademark Office records on February 12, 2004 at Reel 014979, Frame 0633.

(ii) Related Appeals and Interferences (37 C.F.R. § 41.37(c)(1)(ii))

Appellant, the Assignee, and the undersigned representative of the Appellant and Assignee are unaware of any appeals or interferences related to the present appeal.

(iii) Status of Claims (37 C.F.R. § 41.37(c)(1)(iii))

During the course of prosecution, this application has included claims 1-37. The status of these claims is as follows:

Claims	Status
Claims 1-6 and 24-29	Canceled in the Amendment filed December 8, 2005.
Claims 7-23 and 30-37	Pending and Finally Rejected. These are the claims involved in this Appeal.

As noted in the table above, claims 7-23 and 30-37 are involved in this Appeal. A clean copy of these claims, in their present form, is attached to this Brief as a Claims Appendix. Of these claims, claims 7, 16, and 30 are independent claims.

(iv) Status of Amendments (37 C.F.R. § 41.37(c)(1)(iv))

No Amendments under 37 C.F.R. § 1.116 after the February 9, 2006, Final Rejection have been filed in this application.

(v) Summary of Claimed Subject Matter (37 C.F.R. § 41.37(c)(1)(v))

This invention involves articles of footwear or other foot-receiving devices that include a closure system having a mesh or braided panel, as well as to methods of securing articles of footwear or other foot-receiving devices to a foot using such closure systems. The following summary of the claimed subject matter identifies examples of portions of the original specification and drawings at which the various claim features are described or illustrated. The various claim features and the claimed subject matter may be described, discussed, and/or illustrated at other portions of the specification and/or drawings not expressly identified in the summary that follows.

A summary of the claimed subject matter for each independent claim involved in this appeal follows.

(a) Claim 7

Appellant's claim 7 recites a foot-receiving device (such as an article of footwear 100). *See* the original specification at page 3, lines 8-9; page 5, lines 9-15; page 7, lines 8-10; and Figs. 1-3 and 7, element 100. Such devices include a foot-housing member at least partially defining a chamber for receiving a foot (*e.g.*, upper member 108). *Id.* at page 3, lines 9-11; page 7, lines 10-11; page 9, lines 1-4; and Figs. 1-3 and 7, element 108. Foot-receiving devices according to the invention as recited in claim 7 further include a closure system for holding the foot in the foot-housing member. *Id.* at page 3, line 11; page 7, line 12; and Figs. 1-3, element 120. This claimed closure system includes a mesh or braided panel for at least partially holding the foot-receiving device on the foot. *Id.* at page 3, lines 11-13; page 7, lines 12-14; page 9, line 9-20; page 12, line 26 through page 13, line 25; and Figs. 1-3 and 5-7, element 122. The mesh or

braided panel 122 at least partially extends around the foot-housing member and conforms to foot shape or position changes. *Id.* at page 3, lines 21-25; page 7, lines 15-17; page 9, lines 11-16; page 13, lines 11-25; page 13, line 25 through page 14, line 20; and Figs. 1-3 and 7 (particularly Fig. 7).

(b) Claim 16

Appellant's claim 16 recites a piece of footwear. *See* the original specification at page 3, line 8; page 5, lines 16-19; page 7, lines 18-19; and Figs. 1-3 and 7, element 100. Such pieces of footwear, according to this claim, include a sole member. *Id.* at page 7, line 20; page 8, lines 26-28; and Figs. 1-3, element 106. Pieces of footwear as recited in claim 16 further include an upper member extending from the sole member and at least partially defining a chamber for receiving a foot. *Id.* at page 7, lines 20-21; page 8, line 28 through page 9, line 8; and Figs. 1-3 and 7, element 108. Furthermore, pieces of footwear as recited in claim 16 also include a closure system for holding the foot in the footwear. *Id.* at page 3, line 11; page 7, line 22; page 9, line 9-10; and Figs. 1-3, element 120. This claimed closure system includes a mesh or braided panel for at least partially holding the piece of footwear on the foot. *Id.* at page 3, lines 11-13; page 7, lines 22-24; page 9, line 9-20; page 12, line 26 through page 13, line 25; and Figs. 1-3 and 5-7, element 122. The mesh or braided panel 122 at least partially extends around the upper member 108 and conforms to foot shape or position changes. *Id.* at page 3, lines 21-25; page 7, lines 25-27; page 9, lines 11-16; page 13, lines 11-25; page 13, line 25 through page 14, line 20; and Figs. 1-3 and 7 (particularly Fig. 7).

(c) Claim 30

Appellant's claim 30 recites a method for securing a foot-receiving device to a foot. *See* the original specification at page 3, line 14; page 8, lines 1-2; and Figs. 1-4 and 7. Such methods include inserting a foot through an opening defined in a foot-housing member of a foot-receiving device. *Id.* at page 3, lines 14-15; page 8, lines 3-4; page 8, lines 24-26; page 9, lines 1-4; and Figs. 1 and 7. To secure the foot in the foot-receiving device, a closure system 120 is placed adjacent to at least a portion of the opening. *Id.* at page 3, lines 15-16; page 8, lines 4-5; page 9, line 9-13; and Figs. 1-3 and 7. In this claimed method, the closure system 120 includes a mesh or braided panel 122 for at least partially holding the foot-receiving device on the foot, wherein the mesh or braided panel at least partially extends around the foot-housing member and

conforms to foot shape or position changes. *Id.* at page 3, lines 11-13; page 3, lines 21-25; page 8, lines 5-9; page 9, line 9-20; page 12, line 26 through page 14, line 20; and Figs. 1-3 and 5-7, element 122. This claimed method further includes securing the closure system to hold the foot in the foot-housing member. *Id.* at page 3, lines 19-20; page 8, lines 9-10; page 9, line 21 through page 10, line 18; page 12, lines 1-25; and Figs. 1-4, elements 124, 126, 128, 130, 130A, and 130B.

(vi) Grounds of Rejection to be Reviewed on Appeal (37 C.F.R. § 41.37(c)(1)(vi))

In the Final Office Action mailed February 9, 2006, the Primary Examiner finally rejected the claims involved in this Appeal on the following grounds:

(a) Claims 7, 8, 10, 11, 13-17, 19, 21-23, 30, 31, 33, 34, and 37 were finally rejected under 35 U.S.C. § 103(a) as allegedly rendered *prima facie* obvious from the combination of Slasor, U.S. Patent No. 1,382,748 (hereinafter "Slasor") in view of Davis, et al., U.S. Patent No. 6,857,204 (hereinafter "Davis"). *See* the Final Office Action at pages 2-3. A copy of Slasor is attached as Evidence Appendix A, and a copy of Davis is attached as Evidence Appendix B.

(b) Claims 9, 12, 18, 20, 25,[1] 32, 35, and 36 were finally rejected under 35 U.S.C. § 103(a) as allegedly rendered *prima facie* obvious from the combination of Slasor in view of Davis and further in view of Towns, et al., U.S. Patent No. 6,532,687 (hereinafter "Towns"). *See* the Final Office Action at page 3. A copy of Towns is attached as Evidence Appendix C.

None of the pending claims have been allowed, and Appellant appeals the final rejections of all of the remaining and pending claims in this application (*i.e.*, claims 7-23 and 30-37).

(vii) Argument (37 C.F.R. § 41.37(c)(1)(vii))

For the reasons described in detail below, Appellant respectfully asserts that the Primary Examiner's final rejection of claims 7-23 and 30-37 in this application constitutes reversible

[1] Applicant canceled claim 25 in the Amendment filed December 8, 2005. Therefore, the rejection of claim 25 in the February 9, 2006, Final Office Action appears to be an error.

error. Accordingly, the Board should reverse the rejection. Separate sections and arguments are provided below for each ground of rejection and sub-sections are provided for each claim and/or grouping of claims for which separate consideration is desired on this appeal.

(a) Claims 7, 8, 10, 11, 13-17, 19, 21-23, 30, 31, 33, 34, and 37 are Not Rendered *Prima Facie* Obvious from the Combination of Slasor with Davis

(1) Claims 7, 8, 10, 11, 16, 17, and 19 Patentably Distinguish from the Combination of Slasor with Davis

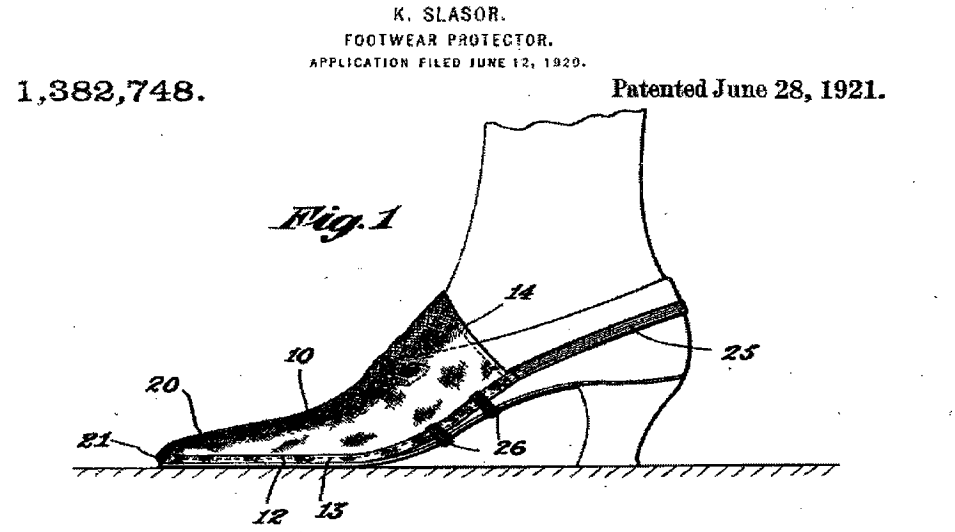
In the Final Office Action, the Primary Examiner rejected claims 7, 8, 10, 11, 16, 17, and 19 as allegedly rendered *prima facie* obvious from the combination of Slasor with Davis. *See* the Final Office Action at pages 2-3. Claims 8, 10, and 11 depend from independent claim 7, and claims 17 and 19 depend from independent claim 16. For purposes of this appeal only, these claims stand and fall together. Appellants will discuss this rejection in detail in terms of independent claims 7 and 16. For the reasons described below, this rejection should be reversed.

To establish *prima facie* obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the applied references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Third, the prior art reference (or the references when combined), must teach or suggest all the claim limitations. *See*, for example, *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991); and *The Manual of Patent Examining Procedure* ("*M.P.E.P.*") §§ 2142 and 2143-2143.03 (Rev. 3, August 2005), as well as the cases cited therein. As will be demonstrated below, the rejection of claims 7 and 16 fails to meet at least two of these basic criteria.

Appellant's claim 7 recites a foot-receiving device that includes: (a) a foot-housing member at least partially defining a chamber for receiving a foot; and (b) a closure system for holding the foot in the foot-housing member, wherein the closure system includes a mesh or braided panel for at least partially holding the foot-receiving device on the foot. The claim further recites that the mesh or braided panel at least partially extends around the foot-housing member and conforms to foot shape or position changes. Appellant's independent claim 16 recites a piece of footwear that includes: (a) a sole member; (b) an upper member extending from

the sole member and at least partially defining a chamber for receiving a foot; and (c) a closure system for holding the foot in the piece of footwear. Claim 16 further recites that the closure system includes a mesh or braided panel for at least partially holding the piece of footwear on the wearer's foot, wherein the mesh or braided panel at least partially extends around the upper member and conforms to foot shape or position changes. As will be demonstrated below, the Primary Examiner has failed to carry his burden of establishing that these claimed structures would have been *prima facie* obvious to a person of ordinary skill in the art at the time the invention was made based on the teachings of Slasor and Davis.

First, Appellant respectfully submits that neither the cited Slasor nor Davis references teaches or suggests a "closure system" of the type recited in Appellant's claims. In the Final Office Action, the Primary Examiner asserts that "Slasor teaches footwear comprising a closure system (10, 25) that conforms over the footwear." *See* the Final Office Action at page 2, lines 21-22 (citing page 1, lines 78-85 in Slasor). This factual assertion is clearly erroneous. As illustrated in Fig. 1 of Slasor (reproduced below), element 10 in Slasor is a protecting cover designed to fit over the exterior of an article of footwear using elastic bands 25 and 26.



See, also, Slasor at page 1, lines 53-61 and page 2, lines 4-26. Nothing in Slasor teaches or remotely suggests that element 10 constitutes a "closure system for holding the foot in the foot-housing member" or a "closure system for holding the foot in the piece of footwear" as recited in

Appellant's claims 7 and 16, respectively. Element 10 of Slasor is simply not a "closure system" as recited in Appellant's claims.

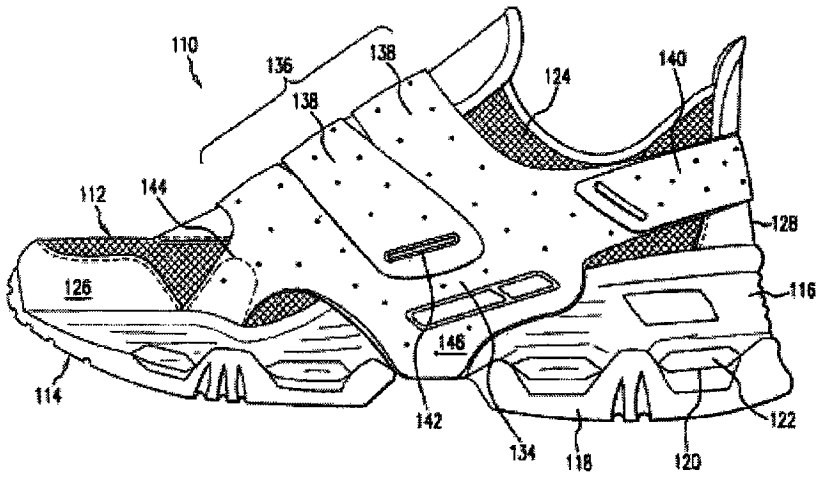
Moreover, Appellant respectfully submits that the protector 10 of Slasor does not inherently function as a "closure system" as recited in Appellant's claims 7 and 16. First, nothing in Slasor describes that the protector 10 performs the claimed "holding" function. Indeed, the sole disclosed purpose of Slasor's protector 10 is to protect the exterior surface of the footwear that it covers. Second, Slasor's protector 10 is designed to be used with existing and complete shoe products. *See* Slasor at page 1, lines 8-14 and page 2, lines 35-43. Because the protector 10 is used with existing and complete shoe products, there is no reason for the protector 10 to also function as a "closure system" (*i.e.*, the complete and existing shoe product already would have had some manner of holding itself on the wearer's foot). Third, Slasor's protector 10 does not, in fact, function as Appellant's claimed "closure system." As illustrated in Fig. 1 of Slasor above, the shoe on which the protector 10 fits is a conventional pump that that extends over the wearer's instep. Given the small portion of the protector 10 that actually contacts the wearer's foot independent of the shoe, and given the flexible nature of the material of the Slasor protector 10 (*see* Slasor at page 1, lines 8-14; page 1, lines 53-57), Appellant respectfully submits that the protector 10 of Slasor would not, in fact, assist in holding a wearer's foot in an article of footwear or other foot-receiving device, as recited in Appellant's claims.

The deficiencies of the Slasor patent *vis-à-vis* Appellant's claims 7 and 16 do not end with those described above. Notably, the Primary Examiner acknowledges in the Final Office Action that Slasor does not disclose a closure system having a mesh or braided panel as recited in Appellant's claims. *See* the Final Office Action at page 2, lines 21-23. The Primary Examiner relies on Davis in an effort to plug this admitted hole in the teachings of Slasor. Specifically, the Primary Examiner asserts:

> Davis teaches footwear being constructed out of mesh; see [Davis at] col. 5, lines 1-6. It would have been obvious to construct the closure system of Slasor out of mesh, as taught by Davis, to allow the footwear to breath [sic].

Id. at page 2, lines 23-25. Appellant respectfully submits that the Primary Examiner's ultimate legal conclusion of "obviousness," based on this reasoning, constitutes reversible error.

First, nothing in the Davis patent teaches or suggests making any part of the footwear closure system from a braided or mesh panel, as recited in Appellant's claims 7 and 16. Rather, Davis describes footwear that potentially includes a mesh material only as part of the upper member 112. *See* Davis at column 4, line 57 through column 5, line 17 and Fig. 1 (reproduced below).



Notably, no part of the Davis closure system[2] is described as including a mesh or braided panel. Therefore, no reference cited by the Examiner teaches or suggests making any portion of a closure system for an article of footwear or other foot-receiving device from a mesh or braided panel. Thus, the combination of Slasor and Davis clearly fails to satisfy the third criterion for establishing *prima facie* obviousness, *i.e.*, the references, even when combined, do not disclose or suggest a closure system including a mesh or braided panel, as recited in Appellant's claims 7 and 16.

Additionally, Appellant respectfully submits that there is no motivation for modifying the protector 10 of Slasor to be made of a mesh material in the manner suggested by the Primary Examiner in the Final Rejection. Quite to the contrary, Slasor teaches away from this proposed modification. Notably, Slasor discloses that element 10 is a "footwear protector." This protector is disclosed as "an apron or cover of impervious flexible material adapted for use by housewives

[2] Davis describes the "closure system" as including outer member 134, vamp 136, vamp straps 138 heel strap 140, etc. *See*, for example, Davis at column 6, lines 12-17; and column 6, line 46, *et seq*.

to be worn over the shoes or pumps while performing their household duties." *See* Slasor at page 1, lines 8-14 (emphasis supplied). Replacing the "impervious" material disclosed by Slasor with a mesh material, as suggested by the Primary Examiner, would destroy the intended protective functions of the "impervious" Slasor "footwear protector." It is not *prima facie* obvious to modify a structure disclosed in a reference such that its intended function is destroyed. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

For at least these reasons, Appellant respectfully submits that the Primary Examiner has failed to carry his burden of establishing *prima facie* obviousness for claims 7 and 16. There is no motivation to modify the Slasor "impervious" structure in the manner described by the Primary Examiner, and in fact, the proposed modification would destroy the intended function of Slasor's protector. Moreover, the cited references, even when combined, fail to teach or suggest a closure system including any portion made from a mesh or braided panel. Accordingly, Appellant respectfully submits that the Primary Examiner's holding that claims 7 and 16 are unpatentable for obviousness constitutes reversible error. Reversal of this rejection is earnestly solicited.

(2) Claims 13, 14, 21, and 22 Patentably Distinguish from the Combination of Slasor with Davis

In the Final Office Action, the Primary Examiner rejected claims 13, 14, 21, and 22 as allegedly rendered *prima facie* obvious from the combination of Slasor with Davis. *See* the Final Office Action at pages 2-3. Claims 14 and 22 depend from claims 13 and 21, respectively. For purposes of this appeal only, these claims stand and fall together. Appellants will discuss this rejection in detail below with respect to claims 13 and 21. Appellant respectfully asserts that this rejection should be reversed.

Claims 13, 14, 21, and 22 ultimately depend from one of claims 7 and 16. Therefore, all of the arguments in Sub-Section (1) above apply with equal force to the rejections of claims 13, 14, 21, and 22. Appellant respectfully asserts that the final rejection of claims 13, 14, 21, and 22 should be reversed for the reasons described above in conjunction with claims 7 and 16.

Appellant's claims 13 and 21 further recite that the claimed foot-receiving device (claim 13) or piece of footwear (claim 21) includes a secondary closure system for holding the foot in the device.[3] In addressing these claims, the Primary Examiner asserts:

> Regarding the second closure system (shoe lace), Slasor teaches the device is worn over shoes or pumps; [see Slasor at] page 1, lines 8-14. The examiner takes official notice that it is well known and conventional in the art for shoes to having [sic] a closure system comprising of shoe laces and eyelets. This shoe lace system serves as the secondary closure system (shoe lace) as claimed.

See the Final Office Action at page 3, lines 1-5.

Appellant respectfully submits that the cited documents and the asserted "Official Notice" fail to carry the Office's burden of establishing *prima facie* obviousness for these claims. Appellant's claims do not merely recite a conventional closure system for an article of footwear or other foot-receiving device. Rather, these claims recite an article of footwear or other foot-receiving device that includes: (a) a closure system including a mesh or braided panel, as described above, and (b) a secondary closure system in addition to this first closure system.

Nothing in the cited art teaches or remotely suggests an article of footwear or other foot-receiving device having two closure systems as recited in Appellant's claims 13 and 21. The pump shoe illustrated in Slasor is held on the user's foot by the presence of the upper material extending over the wearer's instep (a conventional "slip on" type shoe). No "closure system" at all is disclosed in this patent. Davis discloses a single closure system (*e.g.*, outer member 134, vamp 136, vamp straps 138 heel strap 140, etc.). Nothing in these patents teaches or suggests inclusion of a first closure system including a mesh or braided panel and a secondary closure system, as recited in Appellant's claims 13 and 21.

The Primary Examiner's assertion of "Official Notice" also falls short of establishing *prima facie* obviousness for claims 13 and 21. While the Primary Examiner is correct in

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[3] As disclosed in Appellant's specification, the two closure systems both can operate to help hold the shoe or other device on the wearer's foot. The closure system including the mesh or braided panel can help cover the secondary closure system and keep its elements (such as the laces etc.) from sight and from causing a tripping hazard, *e.g.*, in the event the secondary closure system becomes inadvertently loosened. *See*, for example, the original specification at page 3, lines 25-29; and page 10, line 19 through page 11, line 4.

asserting that shoe laces and eyelets for shoes are known and conventional, nothing in the "Official Notice" indicates that it is known to use such conventional closure systems in combination with another closure system, much less in combination with another closure system that includes a mesh or braided panel, as recited in Appellant's claims 13 and 21.

Additionally, Appellant respectfully submits that the cited art, when considered as a whole, teaches away from the proposed modification suggested by the Primary Examiner. Notably, Davis describes his closure system as a substitute and replacement for conventional laces. *See* Davis, for example, at column 1, line 29 through column 2, line 5. Davis further teaches away from including a conventional lace and eyelet arrangement in a footwear structure by teaching that his closure system avoids various disadvantages associated with conventional closure systems including conventional laces. *Id.* Given Davis's teaching away from the Primary Examiner's suggested modification, Appellant respectfully submits that one skilled in the art would not have been motivated to combine the closure system of Davis with another secondary closure system, such as conventional laces. Such teaching away demonstrates a lack of *prima facie* obviousness. *See*, for example, *In re Dow Chemical Co.*, 837 F.2d 469, 5 USPQ2d 1529 (Fed. Cir. 1988); and *In re Hedges*, 783 F.2d 1038, 1041, 228 USPQ 685, 687 (Fed. Cir. 1986).

For at least these reasons, Appellant respectfully submits that the Primary Examiner has failed to carry his burden of establishing *prima facie* obviousness for claims 13, 14, 21, and 22. Accordingly, Appellant respectfully submits that the Primary Examiner's holding that claims 13, 14, 21, and 22 are unpatentable constitutes reversible error. Reversal of this rejection is earnestly solicited.

(3) Claims 15 and 23 Patentably Distinguish from the Combination of Slasor with Davis

In the Final Office Action, the Primary Examiner rejected claims 15 and 23 as allegedly rendered *prima facie* obvious from the combination of Slasor with Davis. *See* the Final Office Action at pages 2-3. Appellant respectfully asserts that this rejection should be reversed.

Claims 15 and 23 directly depend from claims 13 and 21, respectively, and ultimately from claims 7 and 16, respectively. Therefore, all of the arguments in Sub-Sections (1) and (2)

above apply with equal force to the rejections of claims 15 and 23. Appellant respectfully asserts that the final rejection of claims 15 and 23 should be reversed for the reasons described above in conjunction with claims 7, 13, 16, and 21.

Appellant's claims 15 and 23 further recite that the claimed "secondary closure system" is at least partially covered by the "closure system" that includes the mesh or braided panel. As disclosed in Appellant's specification, the two closure systems both can operate to hold the shoe (or other device) on the wearer's foot. By this claimed arrangement, with the closure system including the mesh or braided panel at least partially covering the secondary closure system (*e.g.*, including laces, straps, buckles, or other securing elements), the secondary closure system can be kept out of sight, and a potential tripping hazard can be avoided (*e.g.*, by holding the laces, etc. in the event the secondary closure system becomes inadvertently loosened). *See*, for example, the original specification at page 3, lines 25-29; page 10, line 19 through page 11, line 4.

The cited art clearly fails to teach or suggest this claimed arrangement of a closure system and a secondary closure system. As described in detail above, neither Slasor nor Davis teaches or suggests a combination of two closure systems as described in Appellant's claims (Slasor describes "slip-on" type shoes with no closure system, Davis describes a single closure system as a substitute for conventional laces and the like). Given these substantial deficiencies, the cited bases for rejection even more clearly fail to disclose or suggest an article of footwear or other foot-receiving device that includes a combination of two closure systems arranged in the manner recited in claims 15 and 23, *i.e.*, wherein the "mesh or braided panel-containing closure system" at least partially covers the "secondary closure system."

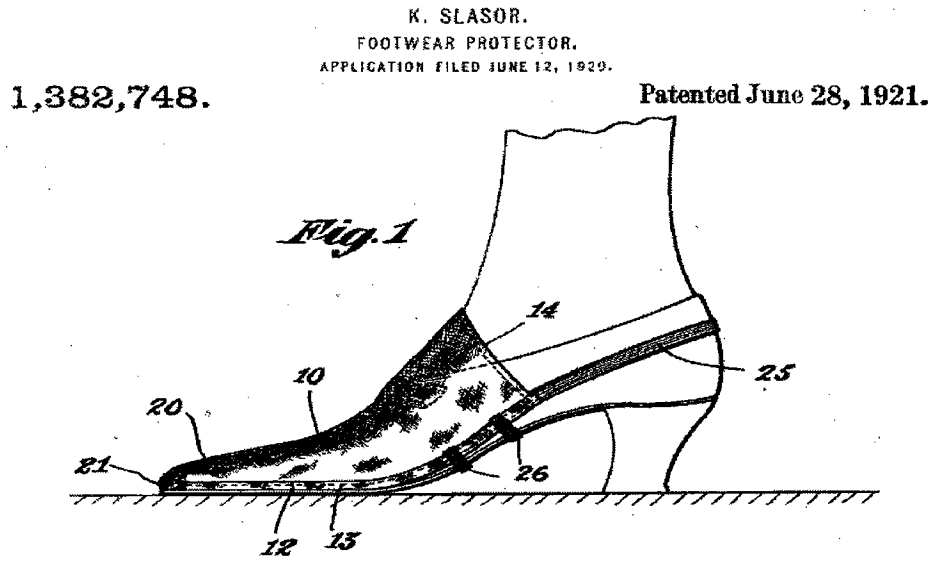
For at least these additional reasons, Appellant respectfully submits that the Primary Examiner has failed to carry his burden of establishing *prima facie* obviousness for claims 15 and 23. Accordingly, Appellant respectfully submits that the Primary Examiner's holding of unpatentability of claims 15 and 23 for obviousness constitutes reversible error. Reversal of this rejection is earnestly solicited.

(4) Claims 30, 31, 33, and 34 Patentably Distinguish from the Combination of Slasor with Davis

In the Final Office Action, the Primary Examiner rejected claims 30, 31, 33, and 34 as allegedly rendered *prima facie* obvious from the combination of Slasor with Davis. *See* the Final Office Action at pages 2-3. Claims 31, 33, and 34 depend from independent claim 30. For purposes of this appeal only, these claims stand and fall together. Appellants will discuss this rejection in detail in terms of independent claim 30. Appellant respectfully asserts that this rejection should be reversed.

Appellant's claim 30 recites a method for securing a foot-receiving device (such as an article of footwear) to a foot. This claimed method includes: (a) inserting a foot through an opening defined in a foot-housing member of a foot-receiving device; (b) placing a closure system adjacent to at least a portion of the opening, wherein the closure system includes a mesh or braided panel for at least partially holding the foot-receiving device on the foot, wherein the mesh or braided panel at least partially extends around the foot-housing member and conforms to foot shape or position changes; and (c) securing the closure system to hold the foot in the foot-housing member. As will be demonstrated below, the Primary Examiner has failed to carry his burden of establishing that this claimed method would have been *prima facie* obvious to a person of ordinary skill in the art from the teachings of Slasor and Davis.

First, Appellant respectfully submits that neither the cited Slasor nor Davis references teaches or suggests placing a "closure system" of the type recited in Appellant's claim (including a mesh or braided panel) adjacent at least a portion of a foot-receiving opening of a foot-housing member and then securing this closure system to hold the foot in the foot-housing member. In the Final Office Action, the Primary Examiner asserts that "Slasor teaches footwear comprising a closure system (10, 25) that conforms over the footwear." *See* the Final Office Action at page 2, lines 21-22 (citing page 1, lines 78-85 in Slasor). This factual assertion is clearly erroneous. As illustrated below (Fig. 1 from Slasor), element 10 in Slasor is a protecting cover designed to fit over the exterior of an article of footwear using elastic bands 25 and 26.



See, also, Slasor at page 1, lines 53-61 and page 2, lines 4-26. Nothing in Slasor teaches or remotely suggests that element 10 is placed adjacent to at least a portion of a foot-receiving opening and then secured "to hold the foot in the foot-housing member," as recited in Appellant's claim 30. Element 10 of Slasor simply is not a "closure system" that can be secured for holding a foot in an article of footwear or other foot-receiving device.

Moreover, Appellant respectfully submits that the protector 10 of Slasor does not inherently function to hold a foot in a foot-receiving device in the manner recited in Appellant's claim 30. First, nothing in Slasor describes that the protector 10 performs the claimed "securing" function. Indeed, the sole disclosed purpose of Slasor's protector 10 is to protect the exterior surface of the footwear that it covers. Second, Slasor's protector 10 is designed to be used with existing and complete shoe products. *See* Slasor at page 1, lines 8-14 and page 2, lines 35-43. Because the protector 10 is used with existing and complete shoe products, there is no reason for the protector 10 to also function as a "closure system" (*i.e.*, the complete and existing shoe product already would have had some manner of holding itself on the wearer's foot). Third, Slasor's protector 10 does not, in fact, function in the manner recited in Appellant's claim 30 "to hold [a] foot in the foot-housing member." As illustrated in Fig. 1 of Slasor above, the shoe on which the protector 10 fits is a conventional pump that extends over the wearer's instep. Given the small portion of the protector 10 that actually contacts the wearer's foot independent of the shoe, and given the flexible nature of the material of the Slasor protector 10 (*see* Slasor at page 1,

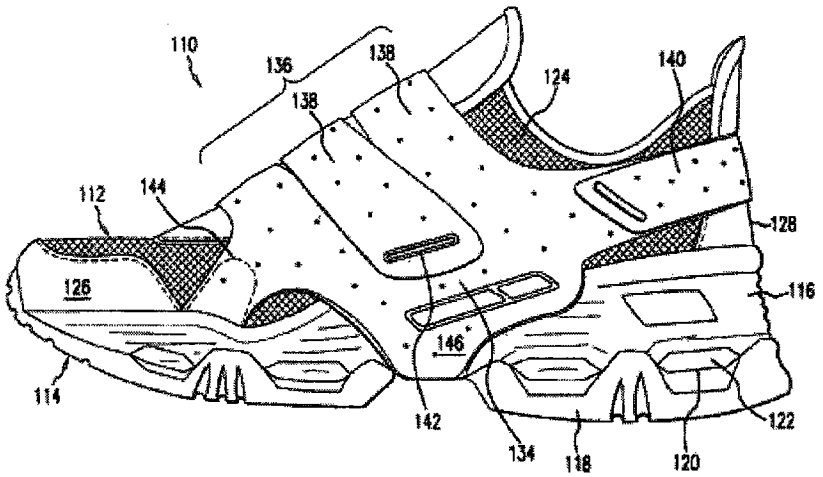
lines 8-14; page 1, lines 53-57), Appellant respectfully submits that the protector 10 of Slasor would not, in fact, assist in holding a wearer's foot in an article of footwear or other foot-receiving device, as recited in Appellant's claim 30.

Further deficiencies of the Slasor patent with respect to Appellant's claim 30 exist. Notably, the Primary Examiner acknowledges in the Final Office Action that Slasor does not disclose a closure system having a mesh or braided panel as recited in Appellant's claims. *See* the Final Office Action at page 2, lines 21-23. The Primary Examiner relies on Davis in an effort to plug this admitted hole in the teachings of Slasor. Specifically, the Primary Examiner asserts:

> Davis teaches footwear being constructed out of mesh; see [Davis at] col. 5, lines 1-6. It would have been obvious to construct the closure system of Slasor out of mesh, as taught by Davis, to allow the footwear to breath [sic].

Id. at page 2, lines 23-25. Appellant respectfully submits that the Primary Examiner's ultimate legal conclusion of "obviousness," based on this reasoning, constitutes reversible error.

First, nothing in the Davis patent teaches or suggests making any part of the <u>footwear closure system</u> from a braided or mesh panel, as recited in Appellant's claim 30. Rather, Davis describes footwear that potentially includes a mesh material only as part of the upper member 112. *See* Davis at column 4, line 57 through column 5, line 17 and Fig. 1 (reproduced below).



Notably, no part of the Davis closure system[4] is described as including a mesh or braided panel. Therefore, no reference cited by the Examiner teaches or suggests making any portion of a closure system for a foot-receiving device from a mesh or braided panel. Thus, the combination of Slasor and Davis clearly fails to satisfy the third criterion for establishing *prima facie* obviousness (*i.e.*, the references, even when combined, do not disclose or suggest a closure system including every claimed feature).

Additionally, Appellant respectfully submits that there is no motivation for modifying the protector 10 of Slasor to be made of a mesh material in the manner suggested by the Primary Examiner in the Final Rejection. Quite to the contrary, Slasor teaches away from this proposed modification. Notably, Slasor discloses that element 10 is a "footwear protector." This protector is disclosed as "an apron or cover of impervious flexible material adapted for use by housewives to be worn over the shoes or pumps while performing their household duties." *See* Slasor at page 1, lines 8-14 (emphasis supplied). Replacing the "impervious" material disclosed by Slasor with a mesh material, as suggested by the Primary Examiner, would destroy the intended protective functions of the "impervious" Slasor "footwear protector." It is not *prima facie* obvious to modify a structure disclosed in a reference such that its intended function is destroyed. *See, Gordon, supra.*

For at least these reasons, Appellant respectfully submits that the Primary Examiner has failed to carry his burden of establishing *prima facie* obviousness for claims 30, 31, 33, and 34. There is no motivation to modify the Slasor structure in the manner described by the Primary Examiner, and in fact, the proposed modification would destroy the intended function of Slasor's protector. Moreover, the cited references, even when combined, fail to teach or suggest the claimed method of holding a foot-receiving device on a wearer's foot using a closure system including a mesh or braided panel. Accordingly, Appellant respectfully submits that the Primary Examiner's holding that claims 30, 31, 33, and 34 are unpatentable constitutes reversible error. Reversal of this rejection is earnestly solicited.

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[4] As noted above, Davis describes the "closure system" as including outer member 134, vamp 136, vamp straps 138 heel strap 140, etc. *See*, for example, Davis at column 6, lines 12-17; and column 6, line 46, *et seq.*

(5) Claim 37 Patentably Distinguishes from the Combination of Slasor with Davis

In the Final Office Action, the Primary Examiner rejected claim 37 as allegedly rendered *prima facie* obvious from the combination of Slasor with Davis.[5] *See* the Final Office Action at pages 2-3. Appellant respectfully asserts that this rejection should be reversed.

Claim 37 ultimately depends from claim 30. Therefore, all of the arguments in Sub-Section (4) above apply with equal force to the rejection of claim 37. Appellant respectfully asserts that the final rejection of claim 37 should be reversed for the reasons described above in conjunction with claim 30.

Appellant's claim 37, which depends from claim 36 (which in turn depends from claim 30), recites that the claimed method further includes securing the foot-receiving device on a wearer's foot using a secondary closure system, wherein the secondary closure system is at least partially covered by the closure system including the mesh or braided panel.[6] In addressing this claim, the Primary Examiner asserts:

> Regarding the second closure system (shoe lace), Slasor teaches the device is worn over shoes or pumps; [see Slasor at] page 1, lines 8-14. The examiner takes official notice that it is well known and conventional in the art for shoes to having

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[5] The basis for rejecting claim 37 in the Final Office Action is confusing. As mentioned above, claim 37 is finally rejected based solely on Slasor and Davis. *See* the Final Office Action at page 2. Claim 37, however, depends from claim 36. Claim 36 is finally rejected based on the combination of Slasor with Davis and Towns. *See* the Final Office Action at page 3. It is confusing as to how a dependent claim can be properly rejected based on two references when rejection of its parent claim requires three references.

Considering the rejections of claims 36 and 37 in light of the similar apparatus claims (*e.g.*, claims 13, 15, 21, and 23), it appears that the Primary Examiner intended to include claim 36 in the rejection based only on Slasor and Davis. Nonetheless, Appellant addresses claim 36 in this brief below, where the combination based on Slasor, Davis, and Towns is addressed.

[6] As disclosed in Appellant's specification, the two closure systems both can operate to help hold the shoe on the wearer's foot. The closure system including the mesh or braided panel can help cover the secondary closure system and keep its elements (such as the laces etc.) from sight and from causing a tripping hazard, *e.g.*, in the event the secondary closure system becomes inadvertently loosened. *See*, for example, the original specification at page 3, lines 25-29; and page 10, line 19 through page 11, line 4.

> [sic] a closure system comprising of shoe laces and eyelets. This shoe lace system serves as the secondary closure system (shoe lace) as claimed.

See the Final Office Action at page 3, lines 1-5.

Appellant respectfully submits that the cited documents and the asserted "Official Notice" fail to carry the Office's burden of establishing *prima facie* obviousness. Appellant's claim 37 does not merely recite securing a foot-receiving device to a wearer's foot using a conventional closure system. Rather, the claim recites securing the foot-receiving device on a wearer's foot using a secondary closure system and a closure system including a mesh or braided panel, wherein the closure system with the mesh or braided panel at least partially covers the secondary closure system, as described above.

Nothing in the cited art teaches or remotely suggests the use of two closure systems as recited in the method of Appellant's claim 37. The pump shoe illustrated in Slasor is held on the user's foot by the presence of the upper material extending over the wearer's instep (a conventional "slip on" type shoe). No "closure system" at all is disclosed in this patent. Davis discloses use of a single closure system (*e.g.*, outer member 134, vamp 136, vamp straps 138 heel strap 140, etc.). Nothing in these patents teaches or suggests using a secondary closure system and at least partially covering this secondary closure system with a first closure system including a mesh or braided panel that also holds the foot in the foot-receiving device, as recited in Appellant's claim 37.

The Primary Examiner's assertion of "Official Notice" also falls short of establishing *prima facie* obviousness for claim 37. While the Primary Examiner is correct in asserting that shoe laces and eyelets for shoes are known and conventional, nothing in the "Official Notice" indicates that it is known to use such conventional closure systems in combination with another closure system, much less in combination with another closure system that includes a mesh or braided panel that at least partially covers the secondary closure system, as recited in Appellant's claim 37.

Additionally, Appellant respectfully submits that the cited art, when considered as a whole, teaches away from the proposed modification suggested by the Primary Examiner. Notably, Davis describes his closure system as a substitute and replacement for conventional

laces. *See* Davis, for example, at column 1, line 29 through column 2, line 5. Davis further teaches away from including a conventional lace and eyelet arrangement for holding a foot in a foot-receiving device structure by teaching that his closure system avoids various disadvantages associated with conventional closure systems including conventional laces. *Id.* Given Davis's teaching away from the Primary Examiner's suggested modification, Appellant respectfully submits that one skilled in the art would not have been motivated to combine the use of the closure system of Davis with use of another secondary closure system, such as conventional laces. Such teaching away demonstrates a lack of *prima facie* obviousness. *See*, for example, *Dow Chemical*, *supra*; and *Hedges*, *supra*.

For at least these reasons, Appellant respectfully submits that the Primary Examiner has failed to carry his burden of establishing *prima facie* obviousness for claim 37 based on the combination of Slasor and Davis. Accordingly, Appellant respectfully submits that this rejection should be reversed.

(b) Claims 9, 12, 18, 20, 32, 35, and 36 are Not Rendered *Prima Facie* Obvious from the Combination of Slasor with Davis and Towns

(1) Claims 9, 12, 18, and 20 Patentably Distinguish from the Combination of Slasor with Davis and Towns

In the Final Office Action, the Primary Examiner rejected claims 9, 12, 18, and 20 as allegedly rendered *prima facie* obvious from the combination of Slasor with Davis (as used to reject independent claims 7 and 16), and further in view of Towns. *See* the Final Office Action at page 3. For purposes of this appeal only, these claims stand and fall together. Appellant respectfully asserts that this rejection should be reversed.

Claims 9, 12, 18, and 20 ultimately depend from one of claims 7 and 16. Therefore, all of the arguments in Sub-Section (a)(1) above apply with equal force to the rejections of claims 9, 12, 18, and 20. Appellant respectfully asserts that the final rejection of claims 9, 12, 18, and 20 should be reversed for the reasons described above in conjunction with claims 7 and 16.

Appellant's claims 9, 12, 18, and 20 further recite that the claimed "closure system" (including the mesh or braided panel) includes a "securing system" having a magnetic fastener arrangement and/or that it is secured using magnetic engagement. Appellant respectfully

submits that the combination of Slasor with Davis and Towns fails to render the claimed arrangements *prima facie* obvious.

The additional citation to Towns does not overcome the deficiencies of Slasor and Davis as described above. More specifically, nothing in Towns provides motivation to modify the "impervious" protector structure 10 of Slasor to include a mesh or braided panel in the manner recited in claims 9, 12, 18, and 20 (this proposed modification to the Slasor structure would destroy the intended protective function of Slasor's protector 10, and nothing in the Towns patent provides motivation for making this function destroying modification). Moreover, even with the additional citation to Towns, the cited references, even if combined, fail to teach or suggest any closure system including a mesh or braided panel. Notably, Towns does not disclose securing a footwear closure system including a mesh or braided panel using magnetic fasteners or magnetic engagement. Accordingly, Appellant respectfully submits that the final rejection of claims 9, 12, 18, and 20 for obviousness constitutes reversible error. Reversal of this rejection is earnestly solicited.

(2) Claims 32 and 35 Patentably Distinguish from the Combination of Slasor with Davis and Towns

In the Final Office Action, the Primary Examiner rejected claims 32 and 35 as allegedly rendered *prima facie* obvious from the combination of Slasor with Davis (as used to reject claims 30 and 34, respectively), and further in view of Towns. *See* the Final Office Action at page 3. For purposes of this appeal only, claims 32 and 35 stand and fall together. Appellant respectfully asserts that this rejection should be reversed.

Claims 32 and 35 ultimately depend from claim 30. Therefore, all of the arguments in Sub-Section (a)(4) above apply with equal force to the rejections of claims 32 and 35. Appellant respectfully asserts that the final rejection of claims 32 and 35 should be reversed for the reasons described above in conjunction with claim 30.

Appellant's claims 32 and 35 further recite that the claimed method includes securing the closure system (including the mesh or braided panel) to hold a foot in the foot-housing member using a magnetic fastener arrangement or magnetic engagement. Appellant respectfully submits

that the combination of Slasor with Davis and Towns fails to render the claimed methods *prima facie* obvious.

The additional citation to Towns does not overcome the deficiencies of Slasor and Davis as described above. More specifically, nothing in Towns provides motivation to modify the "impervious" protector structure 10 of Slasor to include a mesh or braided panel in the manner recited in claims 32 and 35 (this proposed modification to the Slasor structure would destroy the intended protective function of Slasor's protector 10, and nothing in the Towns patent provides motivation for making this function destroying modification). Moreover, even with the additional citation to Towns, the cited references, even when combined, fail to teach or suggest securing any closure system including a mesh or braided panel. Notably, Towns does not disclose securing a footwear closure system including a mesh or braided panel using magnetic fasteners or magnetic engagement. Accordingly, Appellant respectfully submits that the final rejection of claims 32 and 35 for obviousness constitutes reversible error. Reversal of this rejection is earnestly solicited.

(3) Claim 36 Patentably Distinguishes from the Combination of Slasor with Davis and Towns

In the Final Office Action, the Primary Examiner rejected claim 36 as allegedly rendered *prima facie* obvious from the combination of Slasor with Davis and Towns. *See* the Final Office Action at page 3. Appellant respectfully asserts that this rejection should be reversed.

Claim 36 depends from claim 30. Therefore, all of the arguments in Sub-Section (a)(4) above apply with equal force to the rejection of claim 36. Appellant respectfully asserts that the final rejection of claim 36 should be reversed for the reasons described above in conjunction with claim 30.

Appellant's claim 36 recites that the claimed method further includes securing the foot-receiving device on a wearer's foot using a secondary closure system.[7] Appellant respectfully

[7] As disclosed in Appellant's specification, the two closure systems both can operate to help hold the shoe or other device on the wearer's foot. The closure system including the mesh or braided panel can help cover the secondary closure system and keep its elements (such as the laces etc.) from sight and from causing a tripping hazard, *e.g.*, in the event the secondary

submits that the cited documents, including the asserted "Official Notice," fail to carry the Office's burden of establishing *prima facie* obviousness.

Appellant's claim 36 does not merely recite securing a foot-receiving device to a wearer's foot using a conventional closure system. Rather, the claim recites securing the foot-receiving device on a wearer's foot using a secondary closure system and a closure system including a mesh or braided panel. Nothing in the cited art teaches or suggests the use of two closure systems for holding the foot in a foot-receiving device as described in the method of Appellant's claim 36. The pump shoe illustrated in Slasor is held on the user's foot by the presence of the upper material extending over the wearer's instep (a conventional "slip on" type shoe). No "closure system" at all is disclosed in this patent. Davis discloses use of a single closure system (*e.g.*, outer member 134, vamp 136, vamp straps 138 heel strap 140, etc.). Nothing in these patents teaches or suggests securing a foot in a foot-receiving device using a secondary closure system along with a closure system including a mesh or braided panel, as recited in Appellant's claim 36. Moreover, Towns's simply teaching of a magnetic fastener for footwear fails to disclose or suggest holding a foot in a foot-receiving device using two closure systems, as recited in Appellant's claim 36.

The Primary Examiner's assertion of "Official Notice" also falls short of establishing *prima facie* obviousness for claim 36. While the Primary Examiner is correct in asserting that shoe laces and eyelets for shoes are known and conventional, nothing in the "Official Notice" indicates that it is known to use such conventional closure systems in combination with another closure system, much less in combination with another closure system that includes a mesh or braided panel, as recited in Appellant's claim 36.

Additionally, Appellant respectfully submits that the cited art, when considered as a whole, teaches away from the proposed modification suggested by the Primary Examiner. Notably, Davis describes his closure system as a substitute and replacement for conventional laces. *See* Davis, for example, at column 1, line 29 through column 2, line 5. Davis further teaches away from including a conventional lace and eyelet arrangement for holding a foot in a

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closure system becomes inadvertently loosened. *See*, for example, the original specification at page 3, lines 25-29; and page 10, line 19 through page 11, line 4.

foot-receiving device by teaching that his closure system avoids various disadvantages associated with conventional closure systems including conventional laces. *Id.* Given Davis's teaching away from the Primary Examiner's suggested modification, Appellant respectfully submits that one skilled in the art would not have been motivated to combine the use of the closure system of Davis with use of another secondary closure system, such as conventional laces. Such teaching away demonstrates a lack of *prima facie* obviousness. *See*, for example, *Dow Chemical*, *supra*; and *Hedges*, *supra*.

For at least these reasons, Appellant respectfully submits that the Primary Examiner has failed to carry his burden of establishing *prima facie* obviousness for claim 36 based on the combination of Slasor with Davis and Towns. Accordingly, Appellant respectfully submits that the Primary Examiner's holding of unpatentability of claim 36 for obviousness constitutes reversible error. Reversal of this rejection is earnestly solicited.

Conclusion

The Final Office Action fails to carry the Office's burden of establishing that the claimed articles and methods are *prima facie* obvious. There simply is no motivation, teaching, or suggestion for modifying the structures and methods described by the references in the manner suggested in the Final Office Action. In fact, the cited art, when considered as a whole, teaches away from the proposed modifications and/or the proposed modifications would destroy the intended function of the structures disclosed in the cited references. Moreover, even if combined, nothing in the cited references teaches or suggests any portion of a footwear "closure system" that includes a mesh or braided panel, as recited in Appellant's claims. For at least these reasons, the final rejection of claims 7-23 and 30-37 should be reversed. Appellant respectfully solicits reversal of these rejections.

In accordance with 37 C.F.R. § 41.31 Appellant submits this Appeal Brief to the Board of Patent Appeals and Interferences. The Commissioner is authorized to charge the $500 fee for filing this Appeal Brief to the Deposit Account of the undersigned, Deposit Account No. 19-0733.

No additional fees are believed to be due at this time in connection with the filing of this Appeal Brief. Should additional fees be deemed necessary, however such as extension fees

and/or any other fees to maintain the pendency of this application, the Commissioner is authorized to charge Deposit Account No. 19-0733 for the payment of the requisite fee.

Respectfully submitted,

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Dated: July 10, 2006

Claims Appendix (37 C.F.R. § 41.37(c)(1)(viii))
Claims Involved in the Appeal

Claims Appendix (37 C.F.R. § 41.37(c)(1)(viii))
Claims Involved in the Appeal

This Appendix includes a clean copy of claims 7-23 and 30-37, the claims involved in this Appeal:

7. A foot-receiving device, comprising:

a foot-housing member at least partially defining a chamber for receiving a foot; and

a closure system for holding the foot in the foot-housing member, wherein the closure system includes a mesh or braided panel for at least partially holding the foot-receiving device on the foot, wherein the mesh or braided panel at least partially extends around the foot-housing member and conforms to foot shape or position changes.

8. A foot-receiving device according to claim 7, wherein the closure system further includes a securing system that keeps the mesh or braided panel proximate to the foot-housing member.

9. A foot-receiving device according to claim 8, wherein the securing system includes at least one portion of a magnetic fastener arrangement.

10. A foot-receiving device according to claim 8, wherein the securing system includes at least one strap that extends at least partially around a portion of the foot-housing member.

11. A foot-receiving device according to claim 10, wherein the strap secures to the foot-housing member or to a portion of the closure system.

12. A foot-receiving device according to claim 11, wherein the strap secures via magnetic engagement.

13. A foot-receiving device according to claim 7, further comprising:

a secondary closure system for holding the foot in the foot-housing member.

14. A foot-receiving device according to claim 13, wherein the secondary closure system includes a shoelace based securing system.

15. A foot-receiving device according to claim 13, wherein the closure system at least partially covers the secondary closure system.

16. A piece of footwear, comprising:

a sole member;

an upper member extending from the sole member and at least partially defining a chamber for receiving a foot; and

a closure system for holding the foot in the piece of footwear, wherein the closure system includes a mesh or braided panel for at least partially holding the piece of footwear on the foot, wherein the mesh or braided panel at least partially extends around the upper member and conforms to foot shape or position changes.

17. A foot-receiving device according to claim 16, wherein the closure system further includes a securing system that keeps the mesh or braided panel proximate to the upper member.

18. A piece of footwear according to claim 17, wherein the securing system includes at least one portion of a magnetic fastener arrangement.

19. A piece of footwear according to claim 17, wherein the securing system includes at least one strap that extends at least partially around a portion of the upper member.

20. A piece of footwear according to claim 19, wherein the strap secures via magnetic engagement.

21. A piece of footwear according to claim 16, further comprising:

a secondary closure system for holding the foot in the upper member.

22. A piece of footwear according to claim 21, wherein the secondary closure system includes a shoelace based securing system.

23. A piece of footwear according to claim 21, wherein the closure system at least partially covers the secondary closure system.

30. A method for securing a foot-receiving device to a foot, comprising:

inserting a foot through an opening defined in a foot-housing member of a foot-receiving device;

placing a closure system adjacent to at least a portion of the opening, wherein the closure system includes a mesh or braided panel for at least partially holding the foot-receiving device on the foot, wherein the mesh or braided panel at least partially extends around the foot-housing member and conforms to foot shape or position changes; and

securing the closure system to hold the foot in the foot-housing member.

31. A method according to claim 30, wherein the foot-receiving device is a piece of footwear.

32. A method according to claim 30, wherein the securing includes engaging at least one magnetic fastener arrangement.

33. A method according to claim 30, wherein the securing includes extending at least one strap at least partially around a portion of the foot-housing member.

34. A method according to claim 33, wherein the strap forms at least a portion of the closure system and secures to the foot-housing member or to a portion of the closure system.

35. A method according to claim 34, wherein the strap secures via magnetic engagement.

36. A method according to claim 30, further comprising:

securing the foot-receiving device on the foot using a secondary closure system.

37. A method according to claim 36, further comprising: at least partially covering the secondary closure system with the closure system including the mesh or braided panel.

Evidence Appendix A (37 C.F.R. § 41.37(c)(1)(ix))
U.S. Patent No. 1,382,748 to Slasor

This patent was originally made of record by the Examiner in the Office Action mailed September 8, 2005.

K. SLASOR.

FOOTWEAR PROTECTOR.

APPLICATION FILED JUNE 12, 1920.

1,382,748. Patented June 28, 1921.

Fig. 1

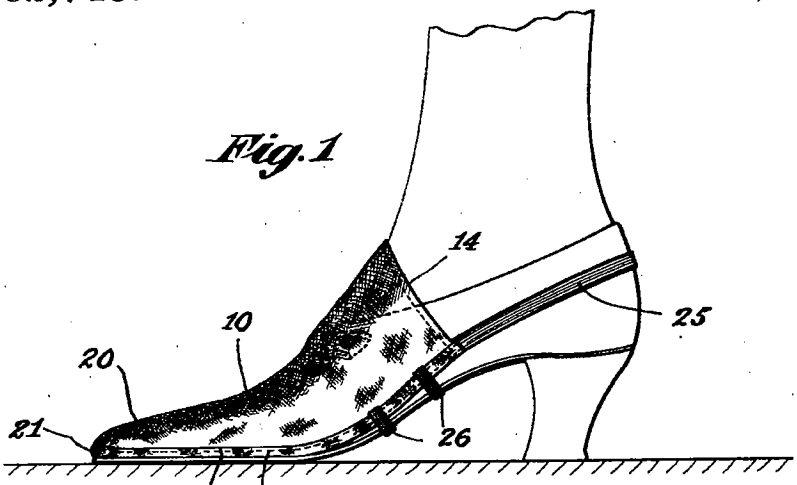


Fig. 2

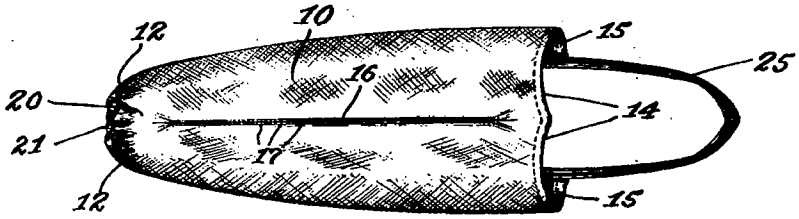


Fig. 4

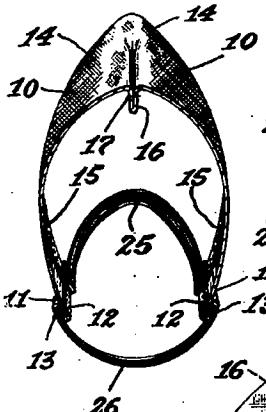
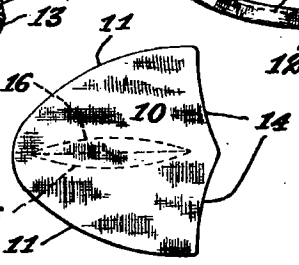


Fig. 6

Fig. 3

Fig. 5



Inventor

Kate Slasor.

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UNITED STATES PATENT OFFICE.

KATE SLASOR, OF SEATTLE, WASHINGTON.

FOOTWEAR-PROTECTOR.

1,382,748. Specification of Letters Patent. Patented June 28, 1921.

Application filed June 12, 1920. Serial No. 388,665.

To all whom it may concern:

Be it known that I, KATE SLASOR, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented a certain new and useful Improvement in Footwear-Protectors, of which the following is a specification.

My invention relates to improvements in footwear protectors and the object of my invention is to provide an apron or cover of impervious flexible material adapted for use by housewives to be worn over the shoes or pumps while performing their household duties.

Another object is to provide a cover embodying means adapting it to conform with or fit snugly over the shoe and that will not readily stretch or become out of shape.

A still further object is to provide a cover adapted to be worn over the shoe that embodies simplicity, durability, and economy in construction, that may be readily slipped upon or removed from a shoe and that is efficient in use.

With the above and other objects in view which will appear as my description proceeds, my invention resides in the novel construction, combination, adaptation and arrangement of parts hereinafter described and claimed.

I accomplish these objects by devices illustrated in the accompanying drawings, wherein;

Figure 1 is a view in side elevation of a protector embodying my invention as it would appear when placed on a shoe;

Fig. 2 is a top plan view of my protector, which is slightly distended to better illustrate the several features;

Fig. 3 is a view in side elevation of my protector, parts being broken away to better illustrate the longitudinal medially disposed dart sewed therein;

Fig. 4 is a view in transverse section of my protector taken in a broken line 4—4 of Fig. 3;

Fig. 5 is a diagrammatic view on a reduced scale illustrating the substantially curvilinear triangular shape of the cover section of my protector; and

Fig. 6 is a view in transverse section taken on a broken line 6—6 of Fig. 3.

Referring to the drawings throughout which like reference numerals indicate like parts, the numeral 10 indicates the cover section of my protector which may be made of any suitable flexible material. The cover 10 may be cut or formed in the desired size and substantially in the curvilinear-triangular shape from a sheet or layer of the desired material as shown in Fig. 5.

The side edges or borders 11 of the cover 10 may be finished by hemming or binding same with tape as desired. However, in practice I have found it practical in order to present a more finished appearance and also to reinforce and bind the edges 11 I have provided a strip of tape 12 which is adapted to be disposed therein and sewed thereto by stitches 13 in a well known manner.

The rear edge 14 of the cover 10 is doubled over and sewed to form a hem 15 as shown more clearly in Fig. 3.

To prevent undue stretching of the cover 10 and to retain and maintain the original shape I cut the cover substantially parallel to the warp and woof of the material. To compensate for any slight irregularities in the cutting operation as for example should the cover 10 designed for a predetermined size of shoe be found to have been cut slightly larger than necessary, also to positively insure that the cover 10 will conform to and fit snugly over any shape of shoe I have provided the cover with a central longitudinally disposed dart 16. The dart 16 is formed by doubling the material at the center for substantially its entire length as shown in Figs. 2, 3 and 4 and then stitching the said doubled portion together with a longitudinally disposed row of stitches 17. The depth of the dart 16 being greatest midway of the length thereof which depth is arranged to gradually decrease in a forward and rearward direction so as to terminate the dart and merge it with the general outline of the cover 10 at points adjacent the forward and rear ends of the apron as shown more clearly in Fig. 3.

To insure the positive retention of the toe portion 20 of the apron 10 on the toe portion of the shoe I have formed a gathering 21 in the cover 10 and the tape 12 at the said forward end.

To yieldingly retain and maintain the said gathering 21 I have provided a short length of elastic cord 22 having its ends adapted to project outwardly through suitable openings formed in the inner wall of the tape 12 and having knots 23 formed on the said ends to retain the said cord in its

proper position in addition to functioning as a yielding retaining means for the gathering 21 as shown more clearly in Fig. 6.

To positively and securely retain the cover 10 in a longitudinal direction on the shoe I have provided an elastic band 25 having the ends thereof securely sewed to the lower rear corners of the said cover to thus form a loop of the said band arranged to extend in a rearward direction as shown in Fig. 2 which loop is adapted to pass around and yieldingly engage the upper portion of the heel of the shoe when the protector is operatively disposed therein as shown more clearly in Fig. 1.

To positively and securely retain the cover 10 in a lateral direction on the shoe I have provided spaced transversely disposed elastic bands 26 having their ends securely sewed in the tape 12 as shown in Fig. 4, at a point adjacent the rear end of the cover as shown in Figs. 1 and 3. The bands 26 being adapted to pass around and yieldingly engage the curved or arched portion of the shoe when the protector is disposed thereon as shown more clearly in Fig. 1.

The rear edge 14 of the protector may be extended upwardly and rearwardly as far as may be desired in order to furnish proper protection for the hose of the wearer but I have found in practice that a protector formed in the shape shown in Fig. 1 is best suited for my purpose and sufficient for all ordinary requirements.

In attaching my protector the shoe is slipped between the cover 10 and the bands 25 and 26 thereof, the protector is then drawn over the shoe, care being taken to have the lower edge of the tape 12 and the gathering 21 disposed in the welt of the shoe in order to properly retain the protector in its position the bands 25 and 26 are then adjusted in the desired position.

From the foregone description taken in connection with the accompanying drawings, the advantages of the construction and the method of operation of my footwear protector will be readily apparent to those skilled in the art to which the invention relates, but, while I have described the principle of operation of the invention, together with the structure which I now consider to be the best embodiment thereof, I desire to have it understood that the protector shown is merely illustrative and that such changes may be made when desired as are within the scope of the invention.

What I claim is:

A footwear protector formed of a flexible sheet of material folded to inclose the upper forward portion of the footwear, elastic retaining straps for the lower edges of the folded sheet underlying the footwear, an elastic heel strap projecting rearwardly from the side edges of the folded sheet, the forward edge of the sheet being gathered, and an elastic cord within the gathered edge to permit expansion and contraction of the protector for intimate engagement with the tip of the footwear.

In witness whereof, I hereunto subscribe my name this 3rd day of June, A. D. 1920.

KATE SLASOR.

Evidence Appendix B (37 C.F.R. § 41.37(c)(1)(ix))
U.S. Patent No. 6,857,205 to Davis, et al.

This patent was originally made of record by the Examiner in the Office Action mailed September 8, 2005.

US006857204B1

(12) **United States Patent**
Davis et al.

(10) **Patent No.: US 6,857,204 B1**
(45) **Date of Patent: Feb. 22, 2005**

(54) **CLOSURE SYSTEM**

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(73) Assignee: **Reebok International Ltd.**, Canton, MA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **10/050,048**

(22) Filed: **Jan. 17, 2002**

Related U.S. Application Data

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(51) **Int. Cl.**[7] **A43C 11/00**
(52) **U.S. Cl.** **36/50.1**; 36/45; 24/442
(58) **Field of Search** 36/50.1, 45, 88, 36/136; 24/442

(56) **References Cited**

U.S. PATENT DOCUMENTS

770,535	A	*	9/1904	Phillips	36/50.1
4,079,527	A		3/1978	Antonius	
4,114,297	A	*	9/1978	Famolare, Jr.	36/50.1
4,126,951	A		11/1978	Antonius	
4,215,493	A		8/1980	Antonius	
4,270,285	A		6/1981	Antonius	
4,275,513	A		6/1981	Antonius	
4,282,657	A		8/1981	Antonius	
4,296,558	A		10/1981	Antonius	
4,451,995	A		6/1984	Antonius	
4,476,639	A	*	10/1984	Zaccaria	36/114
4,486,965	A	*	12/1984	Friton	36/50.1
4,599,811	A	*	7/1986	Rousseau	36/105
4,621,648	A	*	11/1986	Ivany	602/27
4,640,025	A	*	2/1987	DeRenzo	36/50.1
RE32,585	E		2/1988	Antonius	
4,751,784	A	*	6/1988	Petker et al.	36/9 R
4,845,864	A	*	7/1989	Corliss	36/131
4,969,277	A	*	11/1990	Williams	36/97
5,014,448	A	*	5/1991	Perrone	36/110
5,015,251	A	*	5/1991	Cherubini	606/203
5,176,624	A	*	1/1993	Kuehnreich	602/65
5,699,629	A	*	12/1997	Munschy	36/97
5,744,080	A	*	4/1998	Kennedy et al.	264/167
5,797,862	A	*	8/1998	Lamont	602/10
6,212,798	B1	*	4/2001	Koenig et al.	36/110
2003/0029057	A1	*	2/2003	Suzuki et al.	36/50.1

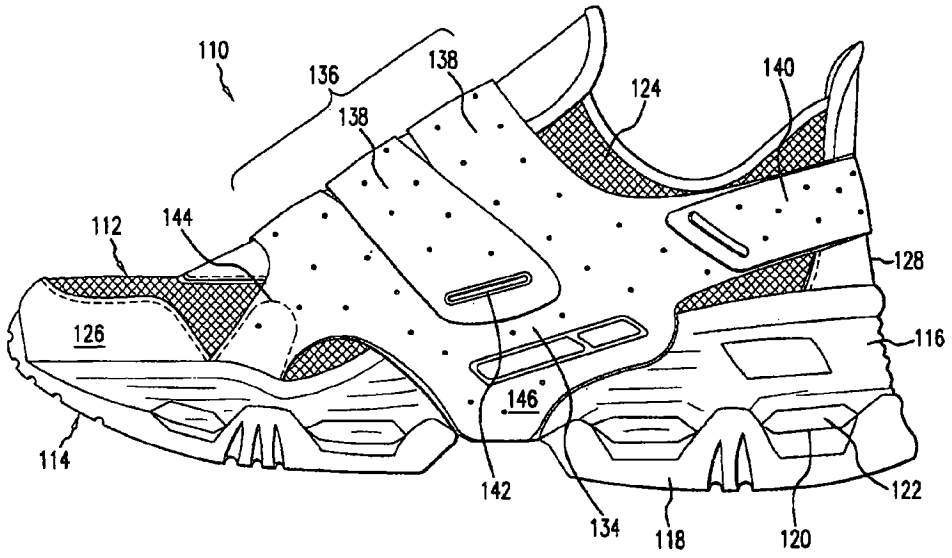
* cited by examiner

Primary Examiner—M. D. Patterson
(74) *Attorney, Agent, or Firm*—Sterne, Kessler, Goldstein & Fox P.L.L.C.

(57) **ABSTRACT**

A closure system comprises a hook and pile material having hooks on one side and pile on the other side. With regard to footwear, the present invention is a shoe comprising this material allowing a wearer to adjust the point of attachment of closure straps on the exterior of the outer member of the shoe, thereby allowing every shoe wearer to wear the strap across the throat of the shoe at a different location. With regard to apparel, the present invention is a closure system comprising a single-ply hook and pile material in which the overlapped piece, or the exterior piece attaches to the underlapped piece, or the interior piece that provides the wearer with the ability to customize the fitting of the apparel, including the tightness of the apparel around an individual.

17 Claims, 5 Drawing Sheets



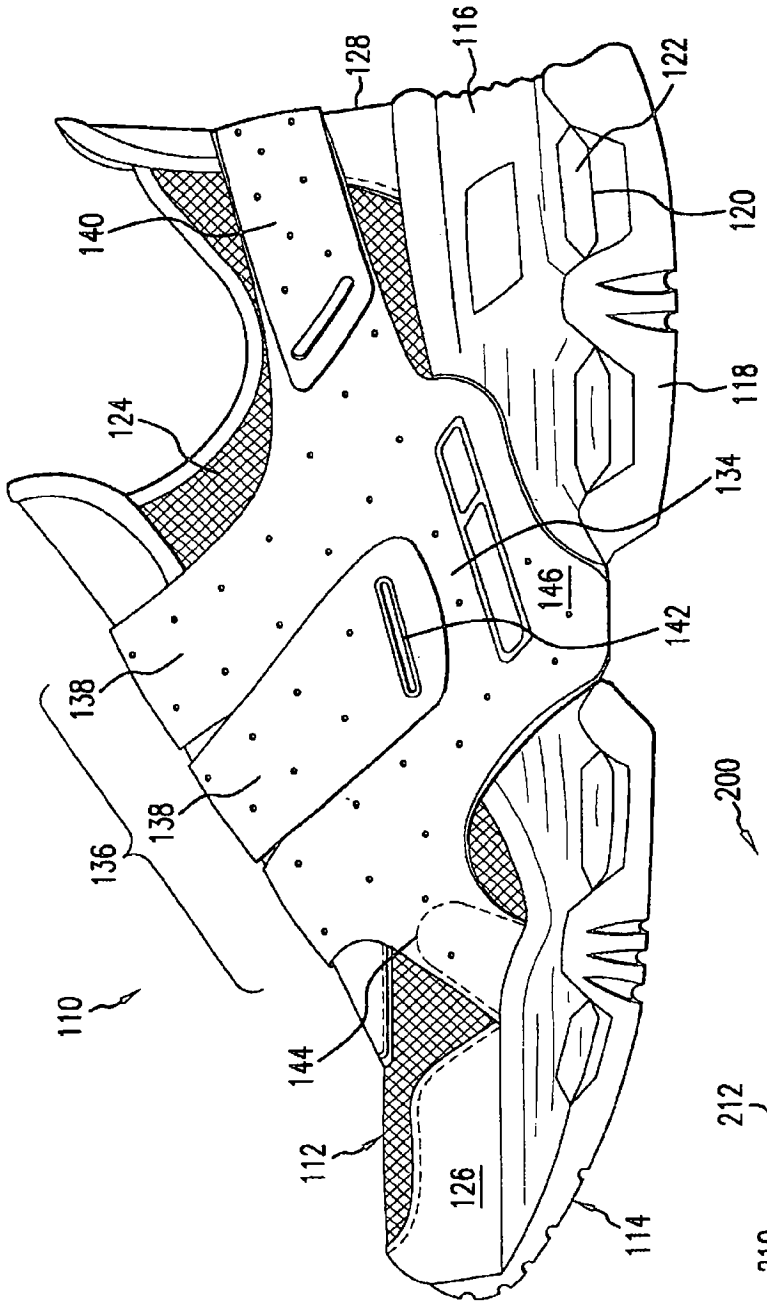

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FIG. 1

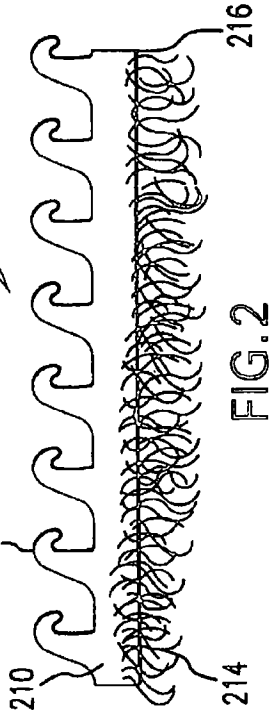
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FIG. 2

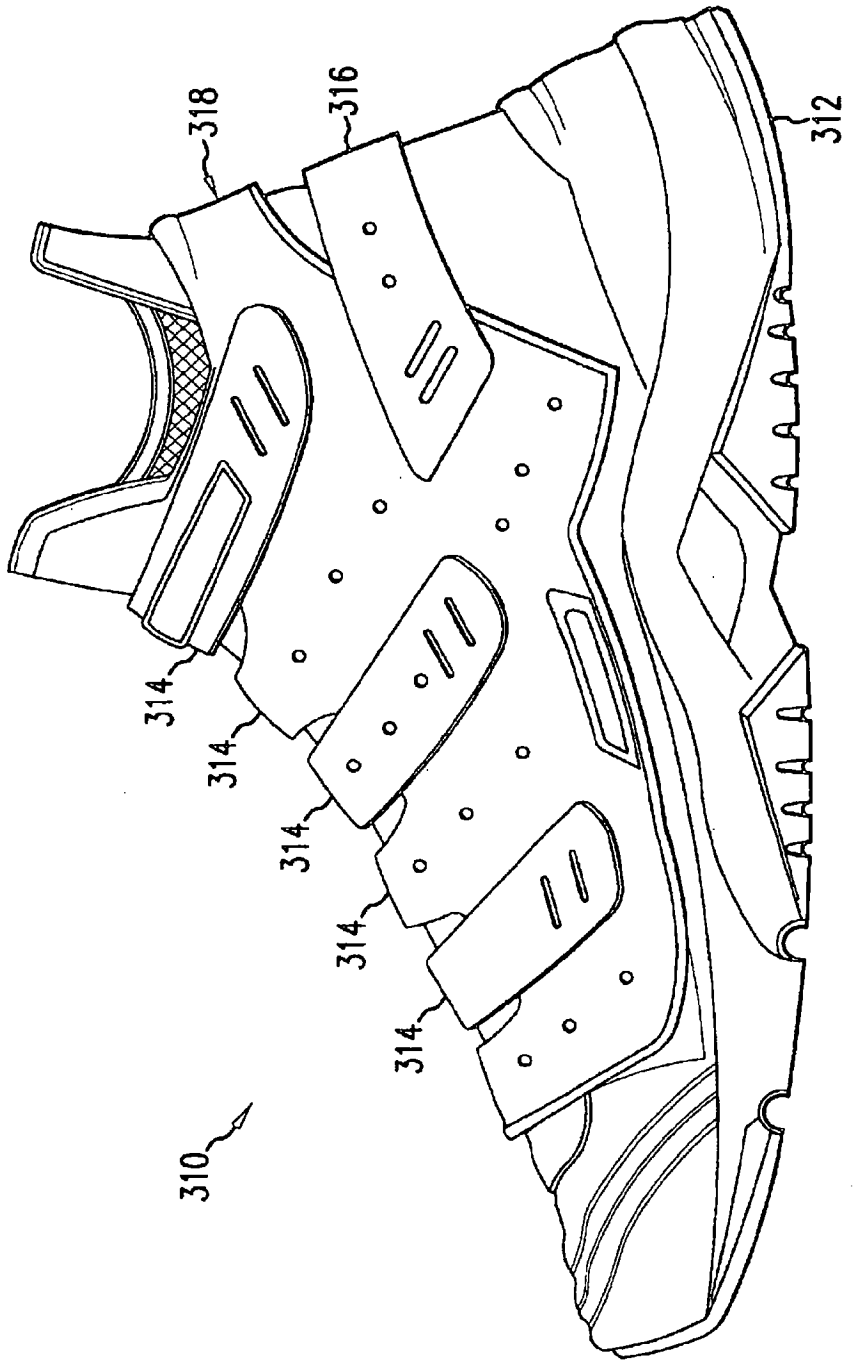

FIG. 3

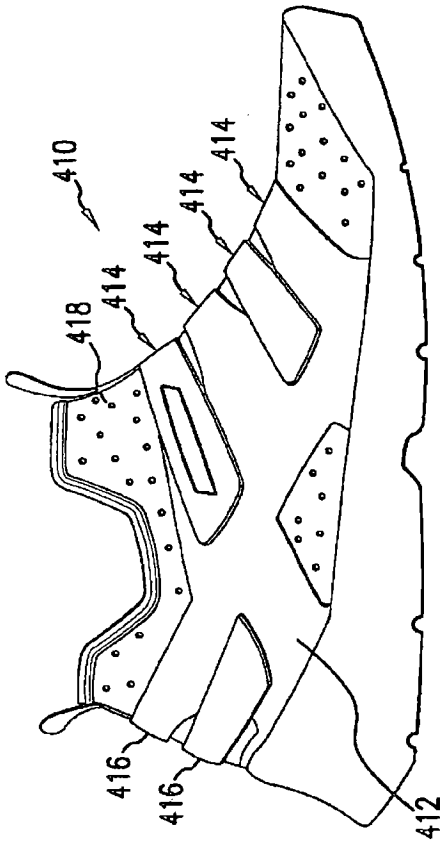
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FIG. 4A

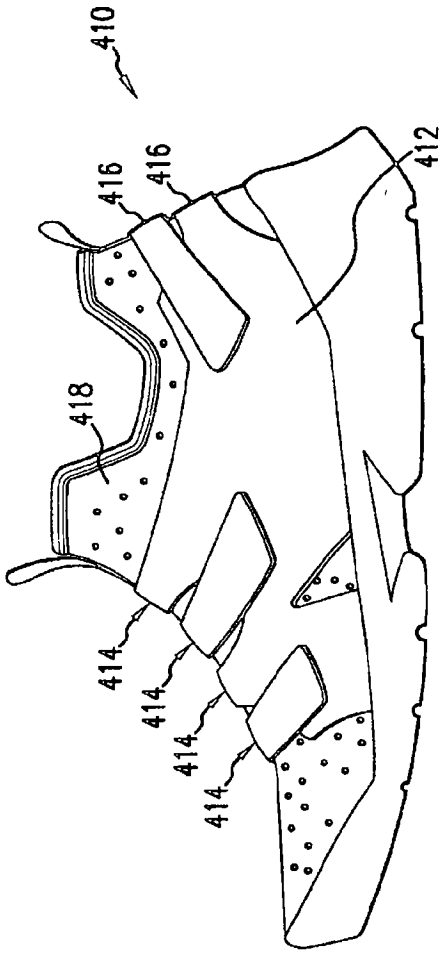
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FIG. 4B

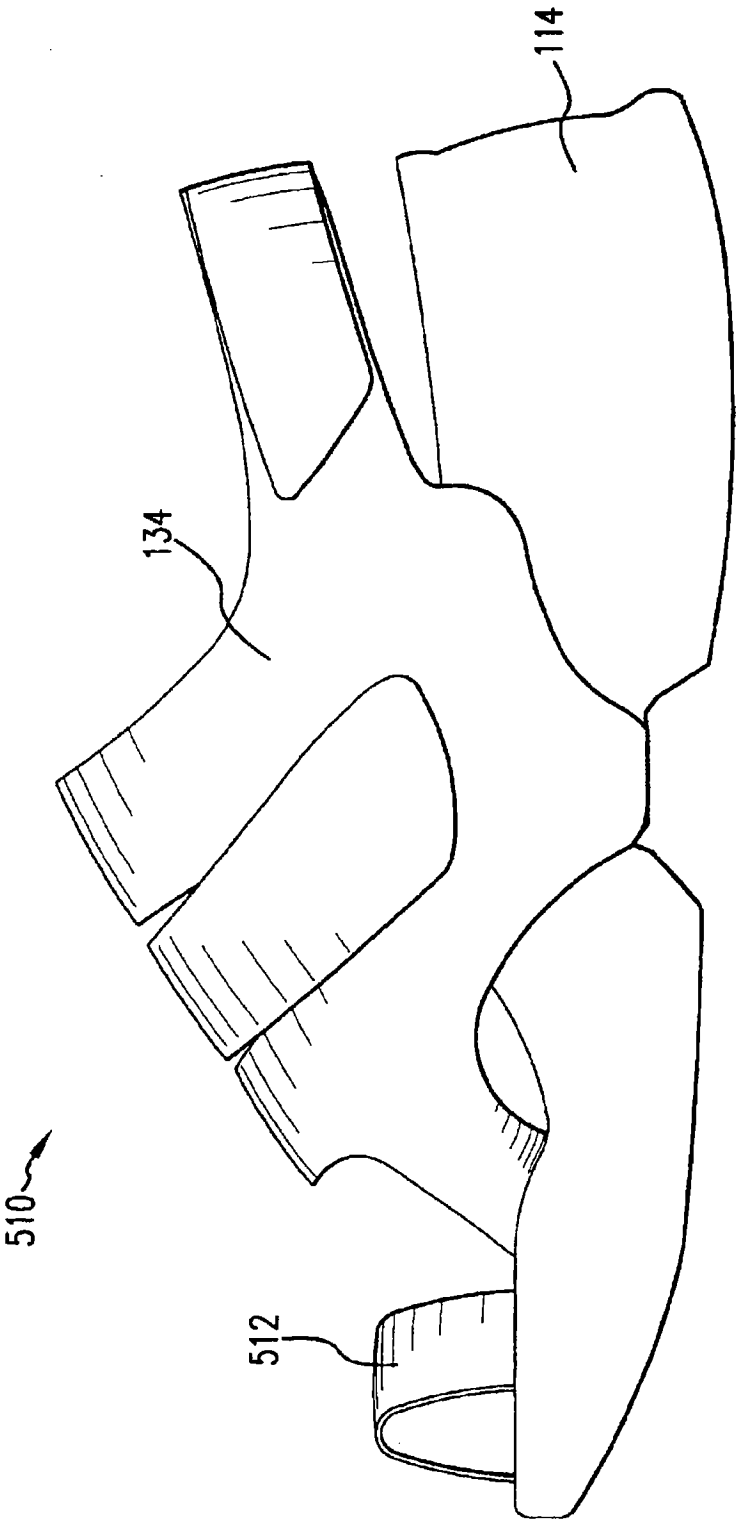

FIG.5

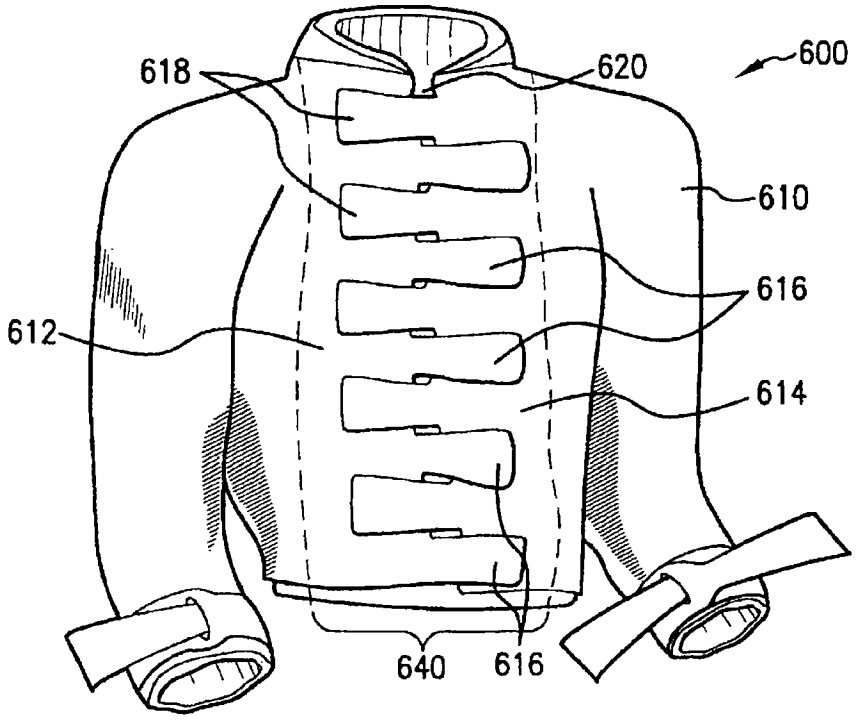
618
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FIG.6

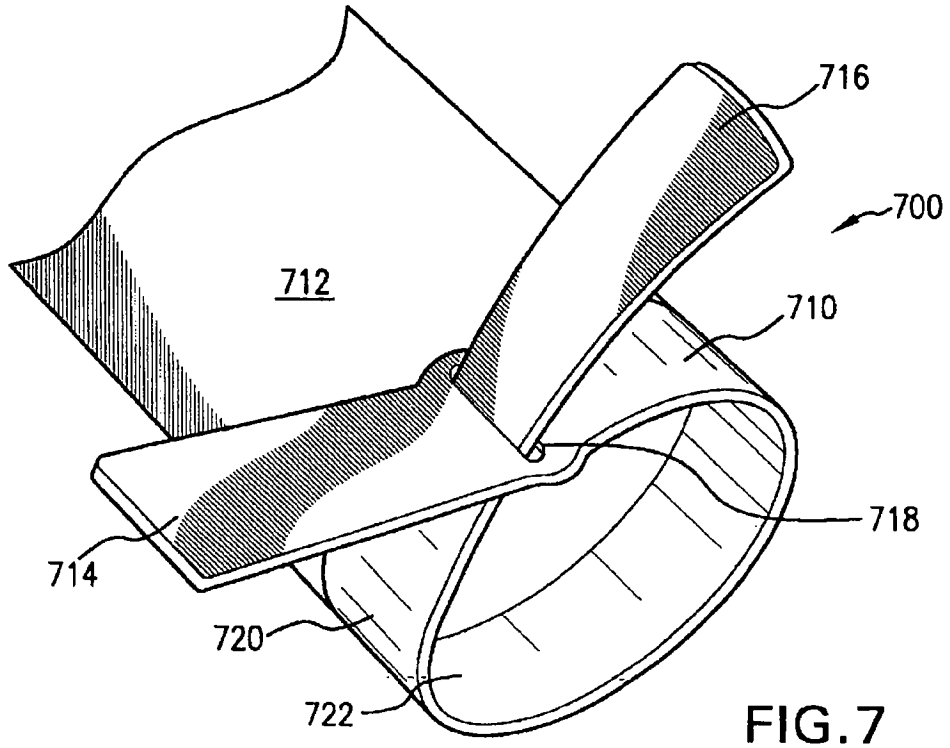
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FIG.7

CLOSURE SYSTEM

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a non-provisional application of U.S. Provisional Application No. 60/261,957 filed on Jan. 17, 2001.

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to an article of footwear and other apparel, especially for use in athletic activity. More specifically, the invention relates to a closure system for an article of footwear. The invention is a customized type closure system that allows the wearer to specifically tailor the fit of a shoe by adjusting the tautness and the attachment location of the closure system.

2. Background Art

Virtually all footwear and many types of apparel includes a closure system. Closure systems are used to tighten a shoe around a foot, hold the shoe in place on the foot, and can provide stabilizing support to the foot. Closure systems for footwear are as varied as the type of footwear that are currently available. For apparel, closure systems secure the flaps of a jacket, seal the cuffs of sleeves or pant legs, and draw any opening in the apparel around the body.

The most common type of closure system for footwear is a lacing system. In a conventional lacing system, a shoelace is strung between two sets of eyelets, one set on each side of a throat of a shoe. Although many lacing conventions are used to lace footwear, typically the shoelace extends from the bottom eyelet of set to the second most bottom eyelet of the opposite set. The lace extends through the second eyelet and extends toward the third most bottom eyelet of the original set, continuing back and forth until each eyelet of each set of eyelets has been laced. Pulling on the ends of the lace at the top of the eyelet sets will tighten the lace in all the eyelets, drawing the shoe snugly around the foot. Due to friction between the laces and the eyelets, and between the laces and the shoe structure, when a wearer pulls the lace taut, the lace is typically most taut at the end of the eyelets being drawn, and more loose as the laces extend toward the bottom eyelets.

As the shoes are worn, the tautness at the top end of the eyelet sets typically loosens due to the constant flexing of the foot or the minimal force exerted against the laces. Therefore, a wearer may be required to draw the laces too tight when tying the shoe. Unfortunately, the tighter that laces are drawn, the more likely that the laces will cause irritation to the top of the foot. Additionally, laces break, causing the wearer to experience discomfort and inconvenience. Thus, shoes using laces as a closure system require frequent retying in order to maintain a proper fit for the most comfort. Additionally, because the eyelets are in a fixed location, the lacing can not easily be tailored to a specific user, forcing every wearer, regardless of foot-shape or sensitivity, to have the laces cross the foot in the exact same place every time the shoe is worn. Thus, lacing tends to be uncomfortable and can be burdensome.

There have, of course, been many attempts to solve the inherent problems associated with conventional lacing systems. One solution proposed by Avia Group International (at the time a subsidiary of the assignee of the present invention) was to have a bilateral lacing system whereby the laces did not cross over the top of the foot. This invention is disclosed in U.S. Pat. No. 4,817,303 to Selbiger. This solution, while helping with the irritation caused by conventional lacing systems did not alleviate the need to have to tie the shoe. In addition, it did not address the need for a customized closure system.

With the advent of the hook and pile closure came shoes which utilized strapping as closure systems which did not require a shoelace. These closure systems were particularly useful in children's shoes because children could put on their shoes without the need for tying a shoelace. Although closure systems of this type were in some ways an improvement in terms of comfort, they suffered from some of the same problems as lacing systems. Particularly, systems using a hook and pile system typically use a strap which extends across the throat of a shoe. On the end of the strap, a piece of material is sewn which has either a pile material or a hook material. The strap extends across the throat of a shoe and either the pile or hook material on the strap attaches to another piece of material sewn onto the upper of the shoe which has the other of the pile or hook material. The material which has been sewn into the upper is a pile material if the strap has a hook material or a hook material if the strap has a pile material. These hook and pile materials are commercially available from a variety of sources. For example, these materials are sold under the trademark VELCRO.

A problem with shoes made using the above-described material is that the shoe closure system can still cause irritation and discomfort due to the multiple layers of material necessary to use and apply the hook and pile configuration. For instance, at the point of attachment of the strap to the upper, there is at least the upper material, the pile material, the hook material and the strap material. When stacked together, the attachment is bulky and unwieldy.

In addition, these systems do not adequately address the problem of customization of the closure system. A wearer can adjust the tightness of the shoe, but the strap can be connected to the upper only at the specific point at which the attaching material is sewn. Thus, a wearer cannot customize the closure system by adjusting the point of attachment, forcing every shoe wearer to wear the strap across the throat of the shoe at the same point, regardless of foot condition, shape or sensitivity.

The most common types of closure systems used in apparel other than footwear is zippers, buttons and snaps. Zippers allow sides of openings to be secured together. For instance, in a jacket, the opening typically extends up the center of the body from the jacket waist to the jacket neck. Zippers include teeth that must align properly in order for a zipper to properly function. Accordingly, the zipper is started at one end, and the teeth engage in order until they are all engaged.

Zippers allow no custom closing of the jacket flaps. One cannot draw a zipper more or less tight. The tightness of the jacket around an individual will be fixed by the location of the zipper. Although one may zip a zipper a desired distance, such as half-way, tightness of the jacket around a wearer's body cannot be adjusted.

Snaps and buttons are also often used as closure systems. Like zippers, snaps and buttons offer no customization of the closure system. Buttons or snaps, on one flap of a jacket for instance, must align properly with button-holes or corresponding snaps on the other flap of the jacket. Although a button can be inserted through any one button-hole, and snaps can be snapped to a non-aligned snap, buttons, button-holes and snaps do not allow for customization by drawing the apparel more or less tight around the wearer's body.

What is needed is a closure system for footwear that allows a wearer to adjust the location of the attachment of the strap across the throat and heel, so that a wearer can make personal, customized adjustments to the attachment location of the straps of the closure system while still providing sufficient support for the foot. Additionally, what is needed is a closure system for apparel that allows a wearer to make personal, customized adjustments to the closure system so the wearer may draw the apparel about the wearer's body to provide a customized fit. Additionally, what is needed is a closure system that uses the customization to provide maximum comfort, while still providing a simple and non-bulky closure system.

BRIEF SUMMARY OF THE INVENTION

The present invention is a new closure system for footwear and other articles of apparel. In footwear, the closure system comprises an outer member of a shoe upper. The outer member extends around the exterior of the shoe. The outer member is comprised of a hook and pile closure material and serves as a low profile, customizable closure mechanism. The closure system can be used on any shoe requiring a closure system, including athletic shoes, casual shoes, dress shoes, women's shoes and any type of boots.

The outer member comprises a material having hooks on one side and pile on the other side. Thus, overlapping any one side of the material over the other side will cause the two overlapping pieces to attach. The outer member includes vamp straps and may include heel straps. Accordingly, each of the straps include either hooks or pile material on the exterior or exposed surface of the straps, along with the entire outer member. Thus, the interior or non-exposed surface is comprised of the other of the hook or pile material. As the straps extend and overlap any portion of the exterior of the outer member, the hooks and the pile material of the interior of the straps and the exterior of the outer member will attach, with the hooks embedding in and attaching to the pile material.

The straps can be adjusted to a desired tautness to provide customized support and stability to the whole foot, including the heel and ankle region. The closure system allows a wearer to adjust the point of attachment, thereby allowing every shoe wearer to wear the strap across the vamp of the shoe at a different location, to customize the fit and conform to any desired foot condition or shape. Thus, the closure system is not area-specific, allowing a wearer to position and attach the closure straps where they are most comfortable for the individual wearer. Additionally, the closure system maintains a low profile, rendering the shoe more comfortable and its appearance more elegant.

With regard to apparel, the present invention is a closure system for jackets, shirts, pants, including pant waists, or cuffs of any item of apparel, including jackets, shirts and pants. The closure system provides a wearer with the ability to customize the fitting of the apparel, including the tightness of the apparel around an individual.

Substantially all of the outer surface of the apparel is comprised of a single-ply material having hooks on one side and pile on the other side. Thus, overlapping any one side of the material over the other side will cause the overlapped piece, or the exterior piece to attach to the underlapped piece, or the interior piece.

A plurality of straps, also comprised of single-ply hook and pile material extend across a slit to fasten the apparel closed. Because the interior surface of the straps contacts the exterior surface of the apparel, the hooks or pile depending on which is the interior surface, of the straps engage and fasten to the hooks or pile of the apparel.

The present invention can be used with closure system for a cuff of a jacket, shirt or pants. The cuff comprises a strap that is sewn or otherwise attached to sleeve, such as a jacket. The strap loops around the circumference of the cuff, and a first end extends through a slot formed into the strap near the second end. The strap of the cuff includes an exterior surface and an interior surface with hooks on one surface and pile on the other surface. As the interior surface of either end of the strap overlaps any portion of exterior surface of the strap, the hooks of the interior surface engage and attach to the pile on exterior surface of the strap.

BRIEF DESCRIPTION OF THE DRAWINGS/ FIGURES

The foregoing and other features and advantages of the invention will be apparent from the following, more particular description of a preferred embodiment of the invention, as illustrated in the accompanying drawings.

FIG. **1** is a shoe showing the closure system of the present invention.

FIG. **2** is a cross-sectional schematic of a hook and pile material for use with the closure system of the present invention.

FIG. **3** is a second embodiment of a shoe, displaying the closure system the current invention.

FIGS. **4A** and **4B** show a third embodiment of a shoe, displaying the closure system of the present invention.

FIG. **5** is a sandal using the closure system of the present invention.

FIG. **6** is a jacket using the closure system of the present invention.

FIG. **7** is a cuff of a jacket using the closure system of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

The preferred embodiment of the present invention is now described with reference to the figures where like reference numbers indicate identical or functionally similar elements. While specific materials and method steps are discussed, it should be understood that this is done for illustrative purposes only. A person skilled in the relevant art will recognize that other materials or method steps can be used.

The present invention combines a hook and pile material with footwear to form a new upper and closure system. The closure system can be used on any shoe requiring a closure system, including athletic shoes, casual shoes, dress shoes, women's shoes and any type of boots. The closure system provides a wearer with the ability to customize the fitting of the shoe while eliminating a bulky multi-layered closure system.

FIG. **1** depicts a shoe **110** having an upper **112** and a sole **114**. Although FIG. **1** depicts the medial side of a left shoe, it will be understood that the invention is equally applicable to the right shoe. Upper **112** is used to hold the foot of the wearer to sole **114**, provide a tight and comfortable fit, and prevent sliding of the foot within the shoe. Upper **112** can be constructed in part of leather or other materials having properties similar to leather. Leather and other similar materials usually provide the necessary rigidity for supporting a foot in the shoe. Optionally, upper **112** can be constructed at least in part of various synthetic materials such as polymer

meshes. Polymer meshes are light and breathable. Meshes can be advantageous in athletic shoes where a lightweight shoe is important to the athlete's performance during athletic activities, e.g., running and walking events. The mesh also allows the foot to breathe thereby keeping the foot relatively dry during athletic activities. Upper **112** could also be a hybrid-type upper constructed of a combination of the lightweight, more flexible, synthetic materials and stiffer materials such as leather straps and panels for reinforcement. As described herein below, upper **112** may be formed entirely from a material having hooks on one side of the material and a pile on the other side of the material. This material is commercially available from a variety of sources. A version of such a material is made and sold by Velcro USA, Inc. under the trademark "ONE-WRAP." In another embodiment of the current invention, the ONE-WRAP® material forms only a portion of upper **112**.

Upper **112** is secured to sole **114** in any conventional manner, e.g., by gluing to the upper surface of sole **114**. Sole **114** provides traction, support and cushioning. Sole **114** may have a midsole **116** to provide cushioning and an outsole **118**. Midsole **116** provides cushioning and support and is more compressible than outsole **118**. Midsole **116** is made of a cushioning material such as polyurethane (PU), ethyl vinyl acetate (EVA) or a polyester elastomer such as HYTREL® foam (made by E. I. du Pont de Nemours and Company of Wilmington, Del.). Outsole **118** provides a ground engaging surface designed for traction and support and is typically made of an abrasive resistant material, such as tough rubber, for wear resistance. An alternate embodiment may have only an outsole made of a flexible durable foam material with substantial wear resistance. Yet another embodiment may have upper **112** glued or bonded to a thermoformed plastic plate which incorporates an outsole of flexible, durable foam material.

Although FIG. **1** shows a separate midsole **116** and outsole **118**, it will be understood that any sole may be used in conjunction with the present invention without straying from the spirit of the invention. FIG. **1** also depicts sole **114** with windows **120** for exposing an insert **122**. Insert **122** can aid midsole **116** in providing increased cushioning of the sole through one or more chambers containing air or gas. A description of the technology used to form insert **122** can be found in U.S. Pat. No. 5,771,606 to Litchfield et al., the disclosure of which is incorporated herein by reference. Again many different sole configurations can be used in conjunction with the invention.

Upper **112** includes a vamp **136** and an inner member **124**. Inner member **124** may be formed of any conventional upper material such as leather. Alternatively, it can be formed from a woven or non-woven fabric such as neoprene. In a preferred embodiment of the invention, the inner member **124** conforms substantially to the shape of the foot and is made primarily of a stretchable material, such as LYCRA® material or another spandex fiber. LYCRA® is a trademark of the E. I. du Pont de Nemours and Company of Wilmington, Del. for its brand of elastane fiber. Inner member **124** may also include other types of fibers to achieve desired characteristics. Accordingly, the woven material of inner member **124** may be comprised of solely spandex or LYCRA® material, or combinations of spandex and/or LYCRA® material, and other materials such as nylon and/or cotton.

Inner member **124** may have attached thereto foxing **126**. Foxing **126** is designed to prevent excessive wear in the toe region of the shoe. Typically, foxing **126** is made of a wear resistant material such as leather.

In the heel region of upper **112** is a heel counter which is attached to inner member **124**. A heel counter cover **128** may be used to cover a conventional heel counter. As with many shoes, a heel counter wraps around the heel region and may be bonded, stitched, glued, etc. to the heel portion of upper **112**. A heel counter provides even further support for the wearer's heel during athletic activities. The heel counter can be made of plastic, leather, paper, rubber or any other material capable of providing heel support.

Upper **112** also includes an outer member **134** extending around the exterior of inner member **124**. Outer member **134** provides support and stability to inner member **124**. In addition, outer member **134** serves as a low profile closure mechanism. Outer member **134** is comprised of a hook and pile closure material, such as is manufactured by Velcro USA Inc. The hook and pile closure material is described in detail below.

FIG. **2** shows a schematical cross-section of a material used for outer member **134**. Outer member **134** comprises a material **200** which consists of a base **210** with hooks **212** projecting from base **210** and pile **214** attached to base **210**. At an interface **216** between the two layers, the plastic from the base entraps some of the fibers of pile **214** bonding pile **214** to form a laminate of pile **214** and base **210** with interface **216** formed by the fibers interpenetrating and co-mingling with the solidified plastic resin. In a preferred embodiment of the present invention, hooks **212** are comprised of "Nylon 12" and pile **214** is comprised of nylon. One such material is made by Velcro USA, Inc., under the registered trademark ONE-WRAP. Also, in a preferred embodiment, the hooks and pile have a life-span of at least 80,000 cycles before breaking down. As would be apparent to one skilled in the relevant art, many different materials could be used to manufacture material **200** of the present invention. A more complete description of the product and the technology used to form material **200** can be found in U.S. Pat. No. 5,518,795 to Kennedy et al., the disclosure of with is incorporated herein by reference.

It should be noted that the ONE-WRAP® material made by Velcro USA, Inc. is sold for general use as a wrap tie to hold bundled items together. For example, the material has been used to bundle vegetables (such as individual stalks of asparagus) at a grocery store and to hold computer wires bunched together while storing and transporting computer accessories in a computer case.

Returning to FIG. **1**, outer member **134** is the exterior portion of upper **112**. Either the hook or pile can be the exterior surface of outer member **134**. Additionally, outer member **134** serves as the closure system of the shoe. Because outer member **134** is comprised of a single ply hook and pile material, overlapping any one side of the material over the other side will cause the two overlapping pieces to attach. As shown, outer member **134** extends from sole **114** up the sides of shoe **110**.

Outer member **134** includes vamp straps **138** and heel strap **140**. Vamp straps **138** extend over vamp **136** and heel strap **140** extends around the heel region including heel counter cover **128**. Vamp straps can extend from the medial side of the shoe to the lateral, or from the lateral side to the medial, or both, as is depicted in FIG. **1**. Specifically, it is vamp straps **138** and heel strap **140** that enable outer member **134** to serve as the shoe closure system. For instance, each of vamp straps **138** and heel strap **140** is comprised of the hook and pile material described with reference to FIG. **2**. Accordingly, each of straps **138** include either hooks or pile material on the exterior or exposed

surface of straps **138**, along with the entire outer member **134**. Thus, the interior or non-exposed surface is comprised of the other of the hook or pile material. As straps **138** extend and overlap any portion of the exterior of outer member **134**, the hooks and the pile material of the interior of straps **138** and the exterior of outer member **134** will attach, with the hooks embedding in and attaching to the pile material.

In use, the shoe can be closed by pulling straps **138** to a desired tautness. When the desired tautness is attained, the interior surface of the straps **138** can be caused to meet the exterior surface of outer member **134**. The hooks and pile material will mesh in a locking engagement. By using such a hook and pile fastening assembly, the tautness of the straps can be easily adjusted. Furthermore, heel strap **140** can also be adjusted to a desired tautness to provide customized support and stability to the heel and ankle region.

Vamp straps **138** independently connect to outer member **134** to allow a wearer of the shoe to customize the closure system for optimal comfort and fit. A wearer can adjust the tightness of the shoe to attain a desired fit. Additionally, because the outer member of the upper **134** is comprised of the hook and pile material, a wearer can customize the closure system by adjusting the point of attachment, thereby allowing every shoe wearer to wear the strap across the vamp of the shoe at a different location, to customize the fit and conform the upper to any foot condition or shape. Thus, the closure system is not area-specific, but allows a wearer to position and attach the closure straps where they are most comfortable for the individual wearer.

The present invention also provides a low profile closure system. Use of the material **200** for both the strap and the upper securely closes the shoe with the thickness of only the strap and the upper and eliminates the need for gluing or sewing a hook material and a pile material to the profile of an already thick strap and/or upper of a shoe. Therefore, even when the closure system is securely closed, there is not a buildup of layered material at the attachment point. Thus, the shoe is rendered more comfortable and its appearance more elegant.

Heel strap **140** extends around the rear of shoe **10**, and is comprised of the same material as outer member **134**. Heel strap **140** consists of two straps which each extend from a respective side of the shoe, overlapping and engagebly locking by the hook and pile material. As such, either of the the two straps of heel strap **140** could be the exterior most strap when the strap is properly secured. Heel strap **140** can be manually engagably locked and unlocked to provide a desired level of tightness and support, enabling a wearer of shoe **110** to enjoy a custom fit.

As seen in FIG. **1**, shoe **10** includes two vamp straps **138**. However, as would be apparent to one skilled in the relevant art, vamp straps **138** could be one, three, four or even more straps. Furthermore, as would be apparent to one skilled in the relevant art, the closure system of the present invention could operate without heel strap **140**. Likewise, heel strap **140** could be one or more straps extending around the heel and/or could include an ankle strap, as would be apparent to one skilled in the art.

Outer member **134** could cover the outer surface of the entire shoe **110**, or, as shown in FIG. **1**, may cover only a portion of the shoe, with the critical characteristic being that the shoe can be custom tightened by allowing the wearer to adust the strapping to accomplish tightening as well as being able to adjust and manipulate the attachment location to provide the utmost comfort.

Each of vamp straps **138** and heel strap **140** includes a grip **142** that extends along the end of the straps. Grip **142** could be a ridge that extends along the end region of the straps, and allows a wearer to comfortably pull a strap to tighten the shoe. Grip **142** could be a ridge, a grommet, a hole or any other element that could provide the above mentioned advantages. Additionally, grip **142** could be a rigid end covering the end of the straps, such as a plastic or rubber liner. As an alternative embodiment, the vamp strap **138** may contain no grip on the ends because the material is easily manipulated by hand.

As shown in FIG. **1**, outer member **134** is attached to inner member **124** through stitching **144**. Stitching **144** holds outer member **134** securely to the shoe, providing stabilization and support. Additionally, outer member **134** extends down to the bottom of sole **114** near the arch region, shown at **146**, and optionally extends across sole **114** to the opposing side. Outer member **134** can be glued, bonded or sewn to the sole in arch region **146**, as would be apparent to one skilled in the relevant art.

In another embodiment, outer member **134** is removably attached to sole **114** and/or inner member **124**. A hook and pile fastener tab (not shown) extends from sole **114** in the area of stitching **144**. Outer member **134** can be positioned around sole **114** and inner member **124**, with a stirrup style fit in arch region **146**. Outer member **134** is removably attached to the hook and pile fastener tab. Outer member **134** then performs substantially as described above, securely supporting and stabilizing the wearers foot in the shoe. This allows a wearer to customize shoe **110** by exchanging outer member **134** for a new or different outer member having a particular design, style or color. Likewise, it would be obvious to one skilled in the art that other ways exist for removably securing outer member **134** to sole **114** and/or inner member **124**.

FIG. **3** shows an alternate embodiment of a shoe **310** with another embodiment of the closure system of the present invention. Shoe **310** includes an outer member **312**. Outer member **312** includes a total of five vamp straps **314** extending across the vamp region and a heel strap **316** extending around the rear of shoe **310**. Outer member **312** is comprised of the same hook and pile material as described above with reference to FIG. **1**. As such, a wearer can customize placement and attachment of vamp straps **314** and heel strap **316** to outer member **312** for maximum comfort, as described above with regard to FIG. **1**. Outer member **312** also includes a support strap **318** which extends around the upper portion of the shoe, supporting the ankle area of the wearer. Support strap **318** can extend all the way around the upper of shoe as part of the uppermost vamp strap **318**. Or, support strap **318** could be a non-adjustable support strap extending around the rear of the shoe from one side of the shoe to the other, as would be apparent to one skilled in the relevant art.

FIGS. **4A** and **4B** show another embodiment of a shoe **410** using the closure system of the present invention. Shoe **410** includes an outer member **412** and an inner member **418**. Outer member **412** is comprised of the same material as described above with reference to FIG. **1**. In this embodiment, outer member **412** includes two heel straps **416** that extend around the rear portion of shoe **410**. Additionally, four vamp straps **414** are used to securely support and allow low-profile customization of the closure system.

In the embodiment of FIG. **5**, the closure system of the present invention is used independent of an inner member as an upper for a sandal type shoe **510**. In this embodiment, outer member **134** is connected to sole **114**. This embodi-

ment also includes a toe strap **512**. Toe strap **512** could be designed to fit over the large toe of the wearer, or extend over all the toes of the wearer, as would be apparent to one skilled in the relevant art. Toe strap **510** could be made of the hook and loop material of outer member **134**, allowing customizing adjustment, or could be another material as would be apparent to one skilled in the relevant art. Likewise, sandal **510** could be used without toe strap **512**, relying only on outer member **134** to bind the foot to sandal **510**.

In any of the above described embodiments, removable design elements or patches may be used in conjunction with the upper to enable a wearer to design his or her own shoe. Because materials having a hook and pile construction (i.e. hook on one side of the material and pile on the other) are used to form part or all of the upper, a wearer could place decorative elements or patches on the exterior of the upper. If the exterior of the upper has pile on the outside, then the element would have hooks, thereby enabling the element to attach to the exterior of the upper. Likewise, if the exterior of the upper has hooks on the outside, then the element would have pile, thereby enabling the element to attach to the exterior of the upper.

With regard to apparel, the present invention combines the material described above, made by Velcro USA, Inc. to form a closure system for jackets, shirts, pants, including pant waists, or cuffs of any article of apparel, including jackets, shirts and pants. The closure system provides a wearer with the ability to customize the fitting of the apparel, including the tightness of the apparel around an individual.

FIG. **6** depicts a jacket **600** utilizing the closure system of the present invention. Jacket **600** includes an outer surface **610** comprising a front chest portion **640**, as shown in FIG. **6** by the dotted lines, having a right flap **612** and a left flap **614**. Right flap **612** and left flap **614** are separated by a split **620**. Right flap **612** and left flap **614** are the portions of the front of jacket **600** that open along split **620** to receive a person, and close to cover the front of a person when jacket **600** is worn.

In one embodiment, substantially all of outer surface **610** is comprised of material **200**, described with reference to FIG. **2**, having hooks on one side and pile on the other side of a single-ply material. Thus, substantially the entire exterior surface of jacket **600** is comprised of either hooks or pile. Jacket **600** could have an inner lining in the sleeves, in the body area, or both.

In another embodiment, the hook or pile material comprises only the front chest portion **640**. In this embodiment, the hook or pile material extends down the front of jacket **600** from about the neck line to the jacket waist. The remaining area of outer surface **610** could be any conventional jacket material.

The closure system of the invention could be implemented using either a laminated hook and pile material or a single-ply hook and pile material, such as material **200**. Either the hook material or the pile material could be the exterior surface of outer surface with the other being the interior surface. Overlapping any one side of the material over the other side will cause the overlapped piece, or the exterior surface to attach to the underlapped piece, or the interior surface.

Extending from right flap **612** are a plurality of right straps **616**. Right straps **616** are lengths of hook or pile material connecting at one end to right flap **612**, and extending across slit **620** of the jacket to fasten to left flap **614**. Because the interior surface of right straps **616** contacts the exterior surface of left flap **614**, the hooks or pile, depending on which is the interior surface, of right strap **616** engage and fasten to the hooks or pile of left flap **614**. Likewise, extending from left flap **614** are left straps **618**. Left straps **618** are positioned such that they extend across slit **620** of the jacket to fasten to right flap **612**. Preferably, right straps **616** and left straps **618** are integral with, and formed from the same cut of material **200** as right flap **612** and left flap **614**. However, right straps **616** and left straps **618** could be sewn, glued, or otherwise attached to right flap **612** and left flap **614**, respectively, as would be apparent to one skilled in the relevant art.

In a preferred embodiment, right straps **616** and left straps **618** comprise material **200**. Each of right straps **616** and left straps **618** is comprised of the single-ply hook and pile material described with reference to FIG. **2**. Accordingly, each of right straps **616** and left straps **618** include either hooks or pile material on their exterior or exposed surface, as well as right flap **612** and left flap **614**. Thus, the interior or non-exposed surface of the straps is comprised of the other of the hook or pile material. As right and left straps **616**, **618** extend and overlap any portion of the exterior of right or left flaps **612**, **614**, the hooks and the pile material of the interior of right and left straps **616**, **618** and the exterior of right and left flaps **612**, **614** will attach, with the hooks embedding in and attaching to the pile material.

In the embodiment shown in FIG. **6**, right straps **616** and left straps **618** are arranged on right flap **612** and left flap **614** such that they alternate along slit **620** when the jacket is in a "fastened" position. Accordingly, when putting on the jacket, a wearer would begin at the top or bottom and alternatingly attach the right and left straps **616**, **618** to the respective opposing right or left flap **612**, **614**. One advantage of the invention is that a wearer can adjust the jacket to provide a custom fit by pulling right and left straps **616**, **618** to a desired tautness, thereby adjusting the tightness of the jacket around the wearer's body. When the desired tautness is attained, the interior surface of right and left straps **616**, **618** can be caused to meet the exterior surface of right or left flap **612**, **614**. The hooks and the pile material will mesh in a locking engagement. By using such a hook and pile fastening assembly, the tautness of the straps can be easily adjusted to provide a custom fit. Additionally, a wearer can customize the closure system by adjusting the point of attachment in two dimensions, both vertically and horizontally, thereby allowing every wearer to wear the right and left straps **616**, **618** at a different location, to customize the fit and conform the jacket to any desired condition or shape. Thus, the closure system is not area-specific, but allows a wearer to position and attach the straps where they are most comfortable for the individual wearer.

FIG. **7** is an embodiment of a cuff **700** of a jacket implementing the closure system of the present invention. Cuff **700** could be on jacket **600** or any other jacket. Likewise, cuff **700** could be the cuff of a shirt or could, alternatively, be the waistline of a pair of pants, shorts or a skirt or any other article of clothing that may be tightened for fitting. Cuff **700** includes a strap **710** that extends completely around the cuff opening. In some apparel, because the circumference of the cuff may be large, the strap material need not extend completely around the opening, but can be supplemented with other material. Strap **710** is preferably comprised of the single-ply hook and pile material described with reference to FIG. **2**. However, strap **710** could be a laminated material, as would be apparent to one skilled in the relevant art. Strap **710** is sewn or otherwise attached to sleeve **712** along a portion of the length of strap **710**. Strap

710 has a primary portion 714 and a secondary portion 716. Primary portion 714 includes a slot 718 through which secondary portion 716 extends. The size of the cuff opening is adjustable by pulling secondary portion 716 through slot 718. Slot 718 may have the same width as strap 710, with sides that bulge outward and extend beyond the width of strap 710 in the region of slot 718, as is shown in FIG. 7. In one embodiment, secondary portion 716 is more narrow than primary portion 714, and thus easily fits through slot 718 when slot 718 has a smaller width than that of primary portion 714. Slot 718 may include a plastic or metal liner extending around the circumference of the slot, through which secondary portion 716 may pass through to avoid direct rubbing by secondary portion 716 against primary portion 714 at the edge of the slot.

Strap 710 includes an exterior surface 720 and an interior surface 722 with hooks on one surface and pile on the other surface. Although either the hooks or the pile could be on the exterior surface 720, cuff 700 is described as if the pile is on the exterior surface 720 and the hooks are on the interior surface 722. Accordingly, as primary or secondary portion 714, 716 extend and overlap any portion of exterior surface 720, the hooks of interior surface 722, which includes the underside of primary and secondary portions 714, 716, engage and attach to the pile on exterior surface 720. Thus, in use, when primary or secondary portions 716, 718 are caused to contact any other portion of strap 710, the hooks and pile engage, fastening the diameter of cuff 700 in place.

To adjust the diameter of the cuff opening, the hooks of primary and secondary portions 714, 716 of strap 710 are both disengaged from the exterior surface 720. Both primary portion 714 and secondary portion 716 are then simultaneously tightened by pulling the ends, and secondary portion 716 is drawn through slot 718 until the cuff is sized to a desired diameter. Finally, primary portion 714 and secondary portion 716 are fastened against the exterior surface 720 of strap 710 by causing the pile of the interior surface of primary portion 714 and secondary portion 716 to contact and engage the pile of the exterior portion.

One advantage of using a single-ply material such as material 200 as the hook and pile material at the cuff of a jacket is that it is no longer necessary to sew or glue separate strips of hook and pile fasteners to the cuff of the jacket to have an adjustable cuff. The single-ply cuff is itself the hook and pile fastener material.

In one embodiment, the system of cuff 700 could be used to adjust the tightness of a pair of pants around a wearer's waist. In this embodiment, the strap extends only partially around the waist in the belt area, and is sewn to pant material. Thus, the strap is actually at least two straps, each having one end sewn or otherwise adhered to the pants in the belt area. As is shown in FIG. 7, a secondary portion, or a first strap extends through a slot in a primary portion, or second strap. The pants can be drawn tighter around the waist by disengaging the hook or pile material on the primary or secondary portion, and pulling the ends of the primary and the secondary portion so that the secondary portion slides through the slot of the primary portion. Finally, the primary and secondary portions can be reattached to the exterior portion of the strap by contacting the interior surface of the primary and secondary portions to the exterior surface of the strap, thereby engaging the hooks and pile of the fastener. In another embodiment, the strap could extend completely around the wearer's waist, as would be apparent to one skilled in the relevant art. It is also apparent that the apparel tightening system could be used on shorts or skirts or any article of clothing that is fit around a wearer's body.

While the invention has been particularly shown and described with reference to preferred embodiments thereof, it will be understood by those skilled in the art that various changes in form and detail may be made therein without departing from the spirit and scope of the invention.

What is claimed is:

1. Footwear, comprising:

a sole;

an upper attached to said sole wherein a portion of said upper is formed of a material having a first side and a second side wherein said first side has a pile and said second side has hooks opposite substantially everywhere said first side has pile,

wherein said portion extends from a throat region of said upper to a region of said upper that attaches to said sole.

2. The footwear of claim 1, further comprising at least one strap formed of said material extending from at least one of a medial side and lateral side of said upper, wherein said at least one strap is capable of being removably fastened to said portion of said upper located on the other of said medial side and said lateral side.

3. The footwear of claim 2, wherein said at least one strap extends from and is formed as a unitary structure with said portion of said upper.

4. The footwear of claim 2, wherein at least two straps extend from said portion of said upper with a first strap extending from said medial side and a second strap extending from said lateral side.

5. The footwear of claim 2, further comprising at least one heel strap of said material extending from said portion of said upper on at least one of said medial and lateral sides, wherein said at least one heel strap extends behind the heel of a wearer and is capable of being removably fastened to said portion of said upper of said footwear located on the other of said medial and lateral sides.

6. The footwear of claim 2, wherein a first heel strap of said material extending from said portion of one of said medial and lateral sides is capable of being removably fastened behind the heel of a wearer of said footwear to a second heel strap of said material extending from said portion of the other of said medial and lateral sides.

7. The footwear of claim 1, wherein said material is a single-ply material.

8. The footwear of claim 1, wherein said portion includes at least 50% of said upper.

9. Footwear comprising:

a sole,

an upper attached to said sole, said upper including a vamp having a medial side and lateral side and at least one vamp strap, wherein at least a portion of one of said medial and said lateral sides of said vamp extending from a throat region of said upper to a region of said upper that attaches to said sole and a portion of said at least one vamp strap are formed from a material with a first side and a second side, said first side having a plurality of hooks and said second side having a pile,

wherein said at least one vamp strap extends from at least one of said medial side and lateral side of said upper and removably fastens to said portion of said vamp located on the other of said medial side and said lateral side of said upper.

10. The footwear of claim 9, wherein said at least one vamp strap is formed as a unitary structure with said portion on said side from which said at least one vamp strap extends.

11. The footwear of claim 9, wherein at least two vamp straps extend from said upper with at least one vamp strap

extending from said medial side and one vamp strap extending from said lateral side.

12. The footwear of claim **9**, said upper further comprising a heel region including at least one heel strap extending from said heel region on at least one of said medial and lateral sides, wherein said heel region and said at least one heel strap are formed from a material with a first side and a second side, said first side having a plurality of hooks and said second side having a pile and wherein said heel strap extends behind the heel of a wearer and is removably fastened to said heel region on the other of said medial and lateral sides.

13. The footwear of claim **12**, wherein said at least one heel strap is removably fastened behind the heel of a wearer of said footwear to at least another heel strap extending from the other of said medial and lateral sides.

14. The footwear of claim **9**, wherein said material is a single-ply material.

15. The footwear of claim **9**, wherein said portion includes at least 50% of said upper.

16. Footwear, comprising:

a sole;

an upper attached to said sole wherein a portion of said upper is formed of a material having a first side and a second side wherein said first side of said material includes a plurality of hooks and said second side of said material includes a pile;

wherein said portion includes a region extending from said sole through a throat region of said upper,

wherein said hook and said pile are coextensive on a single-ply of said material.

17. The footwear of claim **16**, wherein said portion includes at least 50% of said upper.

* * * * *

Evidence Appendix C (37 C.F.R. § 41.37(c)(1)(ix))
U.S. Patent No. 6,532,687 to Towns, et al.

This patent was originally made of record by the Examiner in the Office Action mailed September 8, 2005.

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(12) **United States Patent**
Towns et al.

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(45) **Date of Patent: Mar. 18, 2003**

(54) **FASTENER FOR FOOTWEAR**

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(73) Assignee: **C. & J. Clark International Limited**, Somerset (GB)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(52) **U.S. Cl.** **36/11.5**; 36/50.1; 24/303
(58) **Field of Search** 36/11.5, 50.5, 36/50.1; 24/303

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,111,737	A *	11/1963	Heil	24/303
4,231,137	A *	11/1980	Fujimoto	24/303
4,249,267	A	2/1981	Voss	2/69
4,559,678	A *	12/1985	Birkenstock	24/302
4,646,350	A *	2/1987	Batra	340/540
5,432,986	A	7/1995	Sexton	24/303
6,163,938	A *	12/2000	Weber-Unger	24/303
6,292,985	B1 *	9/2001	Grunberger	24/303

FOREIGN PATENT DOCUMENTS

DE	19719269	5/1997
GB	1125195	8/1968
GB	2287275	9/1995

* cited by examiner

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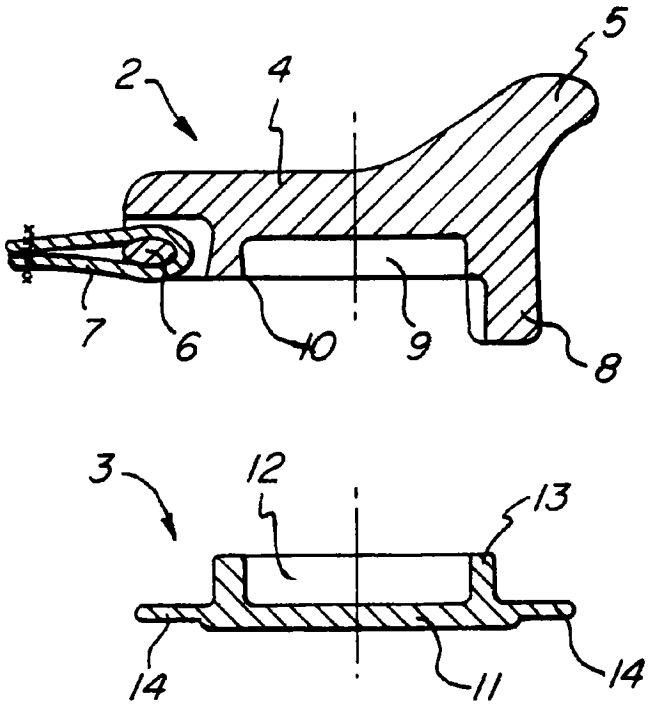
(57) **ABSTRACT**

The combination of a footwear, such as a sandal and a magnetic fastener to be used to hold together a strap and other parts of the footwear. The magnetic faster includes a first body and a base support. Both have cylindrical recesses containing cylindrical magnets mounted therein. The magnets are oriented to be magnetically attractive to each other. The first body and the base support have interlocking cooperable walls to prevent shear movement of the first body and the base support relative to one another.

1 Claim, 2 Drawing Sheets



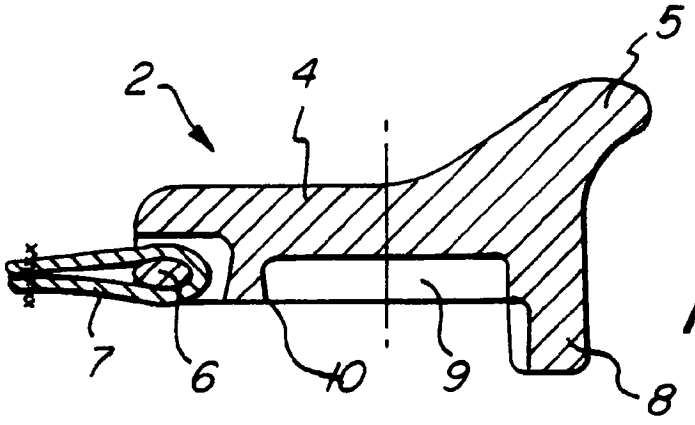


FIG. 1

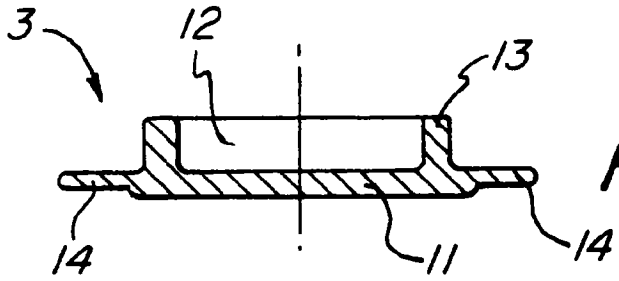


FIG. 2

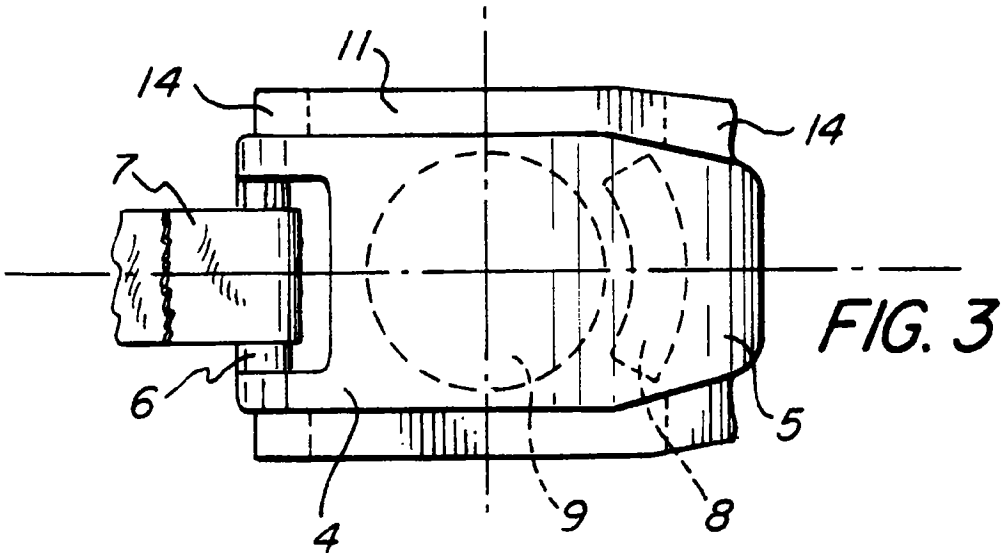


FIG. 3

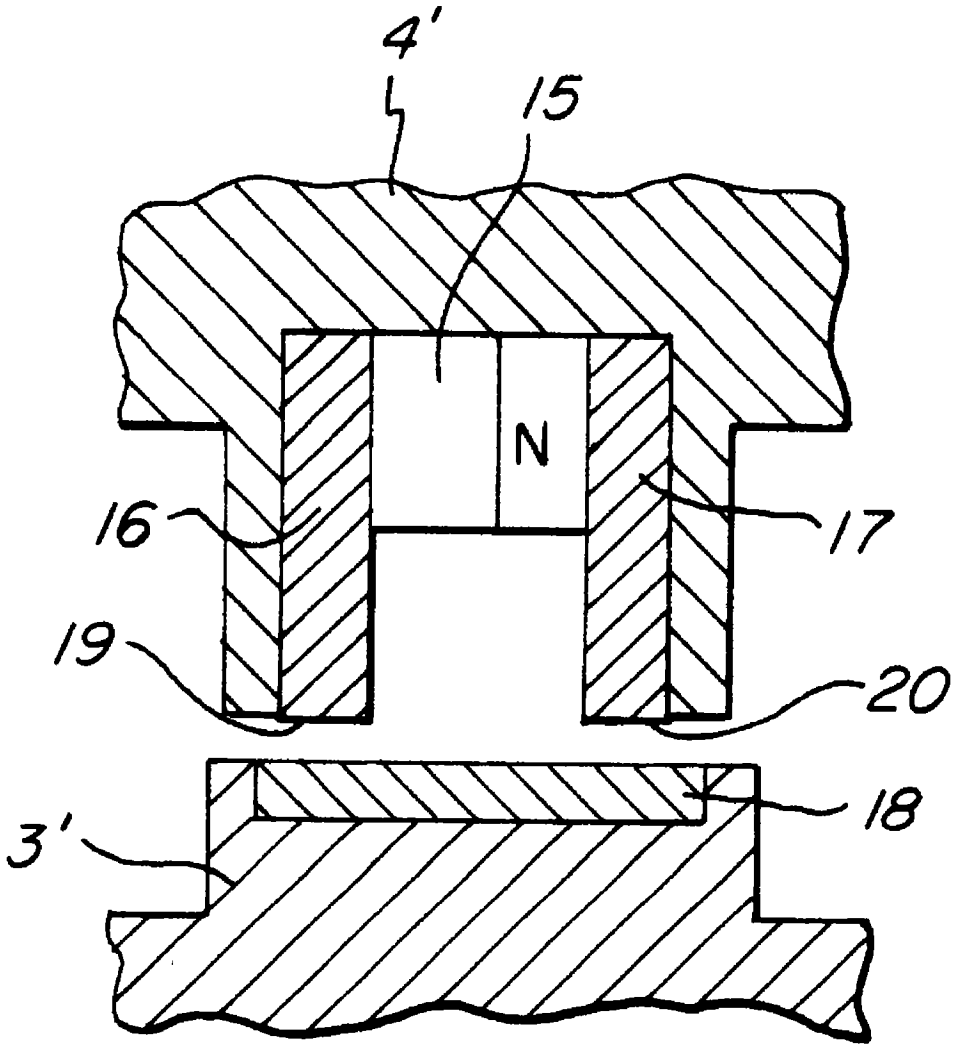


FIG. 4

FASTENER FOR FOOTWEAR

The present invention relates to a fastener for footwear and in particular to a fastener suitable for all types and designs of footwear that employ straps for securement especially but not exclusively sandals.

Traditionally, footwear such as sandals have two or three separate straps each carrying a fastener. This enables the sandal to be securely fastened to the foot when worn but also makes the sandal easy to remove. The fastener for such sandal straps is most commonly in the form of a buckle that allows for adjustment of the length of the strap for comfort. More recently alternative fasteners such as Velcro™ have been used.

The present invention seeks to provide a new fastener for footwear that is simple and easy to operate.

The present invention provides a fastener for use on footwear comprising first and second inter-engaging devices at least one of the devices having a magnetically attractive member for holding the two devices together, the first and second inter-engaging devices further including co-operable surfaces for preventing shear movement of the devices relative to one another.

Preferably, the first device further includes handle means for enabling the device to be gripped. The first device may further include strap attachment means for securing a strap to the first device.

The second device may further include securement means for enabling securement of the second device to a surface in which the securement means may comprise a pair of flanges.

Ideally, the magnetically attractive members of the first and second devices consist of a pair of cylindrical magnets and the co-operable surfaces of the first and second devices may comprise the outer surface of a curved wall and a follower.

An embodiment of the present invention will now be described by way of example with reference to the accompanying drawings, in which:

FIG. **1** is a cross-sectional view of a first part of a fastener in accordance with the present invention;

FIG. **2** is a cross-sectional view of a second part of a fastener in accordance with the present invention;

FIG. **3** is an illustration of a fastener in accordance with the present invention with the two parts engaged; and

FIG. **4** illustrates an alternative fastener in accordance with the present invention.

The fastener **1** consists of two inter-engaging devices: a clasp **2** and a lug member **3**. In FIG. **1** the clasp **2** is shown and consists of a main body **4** with an outwardly extending grip **5**, strap engaging means **6** for securing the clasp **2** to a strap **7**, a downwardly depending tooth **8** and a first magnet **9**. The main body **4** is preferably moulded from hard plastic such as nylon or acetal and includes a downwardly facing recess **10** in which the magnet is located. Although the strap engaging means **6** illustrated in FIG. **1** is a bar arranged to pass through a loop provided in the end of the strap **7**, any suitable strap securement mechanism may be used. The magnet **9** is generally cylindrical and is located between the strap engaging means **6** and the tooth **8**.

The downwardly depending tooth **8** is located at the opposite end of the main body to the strap engaging means **6** and is preferably integrally moulded with the main body **4**. The tooth **8** projects beyond the exposed surface of the describes an arc that substantially corresponds to, but lies outside of, the perimeter of the first magnet **9**. The tooth **8** need not comprise a single downwardly depending flange

and instead may be constructed from a plurality of smaller spaced fingers. The grip **5** extends away from the tooth **8** and the main body **4** and provides a ledge that is grasped by someone wishing to release the fastener, as is described in greater detail below. The grip **5** may be made moulded with the main body **4** in a hard plastics material or may be made from a softer plastics material to improve the ease of use of the grip and enhance its tactile value. In the latter case, the grip may be moulded to the main body in a two-shot moulding process. The surface of the grip **5** may be contoured or roughened to further improve its tactile value.

The lug **3** is illustrated in FIG. **2** and comprises a base support **11** on which is secured a second magnet **12**. The second magnet **12** is also generally cylindrical and is surrounded by a perimeter wall **13** to further hold the magnet **12** in place. At opposing sides of the base support **11**, flanges **14** are provided to enable the lug to be secured to a strap or upper. Whilst the base support **11** of the lug **3** is preferably moulded from hard plastics material and ideally the same material as the clasp, the flanges **14** are best moulded so as to be thinner than the rest of the fastener. This enables the flanges **14** to be stitched to a strap or upper. Alternatively, the lug may be attached to a strap or upper by means of a suitable adhesive.

The first and second magnets **9,12** are of conventional ferric material or a more specialised magnetic compound such as bonded neodemium may be used. Both are coated, for example with a plated nickel finish, to protect the magnets from corrosion. The magnets **9,12** are bonded or moulded in to the clasp **2** and lug **3** with the exposed surface of each magnet being approximately flush with the edges of the surrounding walls of either the main body **4** or the perimeter wall **13**. In this way dirt can be prevented from becoming trapped in between the magnets and the mouldings in which they are mounted and can prevent dirt from partially obscuring the surface of the magnets.

Although the magnets **9,12** are shown to be cylindrical in the accompanying Figures, it will be appreciated that the magnets may be alternative shapes. However, it is preferred that each magnet has a large exposed face for contact with the face of the opposing magnet. Moreover, although it would be preferable for both magnetic members to be permanently magnetised, in an alternative embodiment only one of the magnetic members is permanently magnetised and the second of the magnetic members is constructed from a material that is attracted to the opposing magnetic member. In FIG. **4** an alternative fastener is shown which employs a single magnet. With this arrangement the magnet **15** is mounted in the main body **4'** with opposing metal bands **16,17** either side of the magnet **15**. In the lug **3'** a metal plate **18** is provided that extends so as to engage with end faces **19,20** of the metal bands. In this way a flux circuit is established from the magnet **15** through,the metal bands **16,17** and the plate **18** back to the magnet **15**. The metal bands **16,17** and the plate **18** may be made from steel, for example. Such an arrangement has an advantage over two magnet arrangements of lower material costs as well as concealment and protection for the magnet.

As shown in FIG. **3** when the clasp **2** and lug **3** engage one another the exposed faces of the first and second magnets **9,12** are brought into contact and are aligned. The tooth **8** engages the perimeter wall **13** of the lug **3** to prevent relative shear movement of the clasp and the lug. However, as the tooth **8** describes an arc and the perimeter wall **13** substantially matches the curvature of the tooth, pivotal relative movement of the clasp and lug is enabled. In this way the outer surface of the perimeter wall and the tooth act

as co-operating cam surface and follower. The ability of the clasp and lug to pivot with respect to one another is particularly advantageous with sandal constructions.

Although the fastener may have only one lug and so be restricted in its fastening position, it possible for a plurality of lugs to be provided on a strap or the upper in a line to allow for different fastening positions. Adjustments to the structure and arrangement of the parts of the fastener are envisaged without departing from the spirit and scope of the present invention.

What is claimed is:

1. The combination of a sandal and a fastener;

said sandal having a sandal strap and an opposing sandal body;

said fastener comprising a first body and a base support, said first body having a cylindrical recess, said cylindrical recess having a first cylindrical magnet mounted therein, said sandal strap being attached to said first body; said base support forming a cylindrical tube with one closed end and one open end, said cylindrical tube containing a second cylindrical magnet, said base support having a flange extending from said closed end of said base support, said base support being secured to said sandal body by said flange;

said first and second magnets being oriented to be magnetically attractive to each other;

said first body having a laterally extending grip portion sized to provide a finger grippable ledge of a size to allow sufficient leverage to separate the first and second magnets by lifting the grip portion;

said first body having a curved, downwardly extending wall which seats against and receives a curved outer wall of said cylindrical base portion to prevent shear movement of the first body and the base support relative to one another without mechanical interengagement of said curved downwardly extending wall and said curved outer wall of said cylindrical base portion;

said first body and said base support being capable of pivoting relative movement when said first cylindrical magnet of said first body is magnetically engaged by said second cylindrical magnet of said base support.

* * * * *

Related Proceedings Appendix (37 C.F.R. § 41.37(c)(1)(x))

None, as noted in Section (ii) above.